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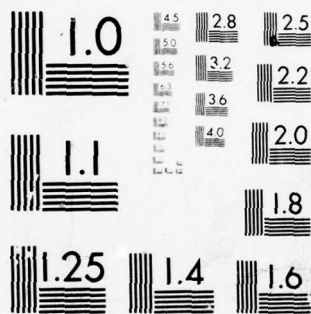
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A LOGICAL APPROACH TO DECISIONMAKING FOR THE BATTALION COMMANDE--ETC(U)
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REPORT DOCUMENTATION PAGE

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BEFORE COMPLETING FORM

1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) A LOGICAL APPROACH TO DECISIONMAKING FOR THE BATTALION COMMANDER ON THE MODERN BATTLEFIELD.		5. TYPE OF REPORT & PERIOD COVERED Final Report, 9 June 78
7. AUTHOR(s) DUNCAN, FRANK E., MAJ, USA		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Student at the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Command and General Staff College ATTN: ATSW-SE		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Frank E. / Duncan		12. REPORT DATE 9 June 78
15. SECURITY CLASS. (of this report) Unclassified		13. NUMBER OF PAGES
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
18. SUPPLEMENTARY NOTES Master of Military Art and Science (MMAS) Thesis prepared at CGSC in partial fulfillment of the Masters Program requirements, U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Decisionmaking; Decisionmaking Methods/Aids; Logical Approach to Decisionmaking.		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The decisionmaking process is affected by two distinct sides. The first is a factual, logical process which will produce a result completely void of human emotion. The second is an emotional, psychological process which although affected by logic and fact, causes occasional erratic, irrational behavior on decisions. This thesis examines both sides of this decisionmaking process but attempts		

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to offer recommendations on only the logical, factual portion. Emotion and psychological factors have an effect on every decisionmaker. One can easily conclude that if all possible facts are available to the decisionmaker, the decision will be better, more effective and less emotionally involved.

A reference book which includes all available decisionmaking methods should be developed which is indexed both alphabetically and by task. When possible, methods should be included as appendices to the reference book. References to doctrine, tactics and philosophy should include where the information can be found. Inclusion of all information would make the size of the document prohibitive. Careful screening of all information available will eliminate redundancy and decrease the size of the document.

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A LOGICAL APPROACH TO DECISIONMAKING FOR THE BATTALION
COMMANDER ON THE MODERN BATTLEFIELD

A thesis presented to the Faculty of the U.S. Army
Command and General Staff College in partial
fulfillment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

by

FRANK E. DUNCAN, MAJ, USA
B.S., West Virginia State College, 1965

Fort Leavenworth, Kansas
1978

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A Logical Approach to Decisionmaking for the Battalion Commander on
the Modern Battlefield

Frank E. Duncan, MAJ, USA
U.S. Army Command and General Staff College
Fort Leavenworth, Kansas 66027

Final Report 9 June 1978

Unclassified; Approved for public release, Distribution unlimited.

A Master of Military Art and Science thesis presented to the faculty of the
U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027

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MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

Name of candidate: Major Frank E. Duncan

Title of thesis: A logical approach to decisionmaking for the
battalion commander on the modern battlefield.

Approved by:

Ronald C. Thompson Research Advisor

Paul E. Gray, Member, Graduate Faculty

_____, Member, Consulting Faculty

Accepted this 5th day of June, 1978 by [Signature],
Director, Master of Military Art and Science.

The opinions and conclusions expressed herein are those of the individual student author and do not necessarily represent the views of either the U. S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

A LOGICAL APPROACH TO DECISIONMAKING FOR THE BATTALION COMMANDER ON THE MODERN BATTLEFIELD, by Major Frank E. Duncan, USA, 95 pages.

The decisionmaking process is affected by two distinct sides. The first is a factual, logical process which will produce a result completely void of human emotion. The second is an emotional, psychological process which although affected by logic and fact, causes occasional erratic, irrational behavior on decisions.

This thesis examines both sides of this decisionmaking process but attempts to offer recommendations on only the logical, factual portion. Emotion and psychological factors have an effect on every decisionmaker. One can easily conclude that if all possible facts are available to the decisionmaker, the decision will be better, more effective and less emotionally involved.

A reference book which includes all available decisionmaking methods should be developed which is indexed both alphabetically and by task. When possible, methods should be included as appendices to the reference book. References to doctrine, tactics and philosophy should include where the information can be found. Inclusion of all information would make the size of the document prohibitive. Careful screening of all information available will eliminate redundancy and decrease the size of the document.

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CHAPTER I

INTRODUCTION

Given enough time and references, most Infantry unit leaders could make sound, logical decisions in the most demanding situations. Normally, demanding situations don't allow the luxury of studying a subject before making decisions that will change the lives of those involved and possibly change history. The decisionmaking process on any battlefield is one that must be timely, decisive, simple and keyed to prior knowledge of appropriate subjects. There is no time to be indecisive. This is particularly true today as modern weapons and vehicles increase in firepower and mobility. Hindsight is of only partial value since a commander must react to each situation in a slightly different way each time.

This thesis evaluates and consolidates the myriad of tasks an Infantry commander must conduct and the decisions he must make when faced with a numerically superior armor force. The thesis discusses suggested methods that have been tried and proven effective by former commanders when they have had to make timely and important decisions. These methods vary from a simple 3"x5" card to scientific formulas and decision model methods used in modern management.

It should be made clear from the outset that this thesis is being written to prove a need for better organization and efficiency. Examples of decisionmaking methods used within are only representative and not the prepared, compiled and analyzed list that is requested in the final chapter. This thesis will show the need for further research, analyzation and

comparison of all methods in order to eliminate redundancy, increase efficiency and assist commanders by developing a consolidated functional system.

Decisions are basically two sided. One side deals with logic and fact. The other deals with human emotion. No attempt will be made to answer, correct or control the emotional side. This thesis will discuss the difficulty and magnitude of the decisionmaking process and then establish the need for methods that will assist the commander in forming the logical, factual side of his decision.

The new U.S. Doctrine in FM 100-5 makes correct decisions even more critical. The active defense requires the battle to be fought at a lower command level and therefore makes decisionmaking much more emotional. Emotion of the commander is in direct proportion to his distance from the battlefield and involvement with actual combat.

PROBLEM STATEMENT

Are present decisionmaking methods adequate to meet the needs of the battalion commander defending against a superior armor force on the modern battlefield?

PROCEDURES

The procedure for proving that a problem exists and that the solution to that problem is both necessary and possible is:

1. Chapter 1 will discuss the battalion commander, the battalion task force, defensive doctrine/tactics, the Soviet threat and the magnitude of the number of concurrent and consecutive decisions to be made.

Definitions of terms necessary to understand defense in this situation are located in Appendix B.

Although the decisions on the modern battlefield with modern technology and current doctrine/tactics are more complex, these decisions must be made by leaders who are younger and less experienced than ever before. They must make these decisions at a faster rate than their predecessors and many times without guidance from superiors.

2. Chapter 2 will establish why methods to aid decisionmaking are necessary. Risk and uncertainty must be eliminated as much as possible to assist the decisionmaker.

3. Chapter 3 will list and discuss some representative examples of decisionmaking methods, their utilization and the advantages/disadvantages of each. This chapter is not all inclusive of methods available. Information within the chapter will indicate much redundancy and inefficiency in our present system. This is the intent of the chapter. Although most current methods are good, they reflect the ideas of the author only and not the consolidated opinion of all U.S. Army experience. It is representative and offers only an understanding of available guidance.

4. Chapter 4 will be an analysis and comparison of the methods. The question, "How can one method work with another to further assist the decisionmaker?" will be answered.

5. Chapter 5 will answer the problem statement and offer recommendations.

BACKGROUND

Historically, many methods have been devised to assist a commander in making difficult decisions, encumbered with so many variables that decisions become confusing and complex. Although claims have been made that these methods are unnecessary; checklists, formats and wallet size reminder cards are often used to insure efficiency. Use of these aids make complex decisions logical, unemotional thought processes. Controlling emotion allows the thought process to remain calm and clear. Rational and expeditious decisions are a result.

History also proves that many mistakes could be prevented if commanders would follow simple history lessons. These lessons are in the form of checklists or formats which previously proved successful. Israeli generals would have been wise indeed had they followed a checklist which included the comment, "use of combined arms" when they responded to the Arab attack in October, 1973. This lesson was learned during WW II on the same battlefields. Dogmatically following experiences of the 1967 war may have prevented the commander from making correct decisions; however, doctrine rather than dogma must be taught to accompany these methods.

Loss of valuable lessons and experience is inevitable unless these methods and information are consolidated, evaluated, produced and offered to leaders. Confidence and pride are direct products of a leader who can face situations with assurance of success. Covering all situations is impossible. Some that are included are situational and must be modified. Organization and planning is desirable and absolutely necessary before the commander leads his unit into battle. Organization of this proposed

system would satisfy this requirement. Armed with a guide for many situations, the leader can and will adapt to a systematic evaluation of parts of a decision; evaluate these parts, consolidate them and justify a sound decision based on knowledge of the parts. For example, a commander may use a combination of methods to insure a proper defense of a position. He may use a checklist for supplies, a format to issue the order, a relative combat power estimator to determine necessary friendly forces to face opposing forces and templates to determine or depict fields of fire, avenues of approach, dead space and weapons employment. The combination of these methods does not make the decision for the commander but logically places before him necessary information to evaluate, analyze, compare and eventually make the decision. The methods are a valuable tool and in most cases save rather than expend time.

THE BATTALION COMMANDER

Varied backgrounds of battalion commanders and their individual personalities prevent the writing of a manual that covers all situations and specific reactions to them.

Each battalion commander approaches the solution of a problem in different ways. The commander reacts according to his background, experience, education, age, rank and personal goals.

Although almost all battalion commanders are serving in the rank of Lieutenant Colonel, their elevation to that rank was not identical. Method of commissioning is one of the ways to stereotype officers. Exceptions to stereotyping are prevalent; however, an attempt is made by many to guess the actions of the commander based on this reasoning. Ages vary greatly

even with the current centralized method of commander selection. Experience is extremely varied both by choice of individual officers and needs of the service. Individuals who have spent years as staff planners and organizers suddenly find themselves as Infantry Battalion Commanders. Conversely, the troop oriented officer with much troop time must adapt to being a staff officer. This variety of experience is productive in many ways, though many problems arise. New ideas are constantly available for evaluation.

The battalion commander's duties entail control of approximately eight hundred people. His control is characterized by less than absolute power but enough to change the destinies and life styles of his subordinates.

The battalion commander is the first commander in the chain of command that has a formal staff. This fact alone forces the battalion commander to be a manager as well as a leader. That is not to say that subordinate leaders need not manage or that senior commanders need not lead. Because of his unique level of command, the battalion commander is probably expected to deal more evenly with both the leadership and management aspects of command.

He finds himself, in both garrison and combat, close enough to personally influence the action but still distant enough to subjectively and logically evaluate each situation. He is required to make logical decisions that sometimes cannot be tempered with emotion felt by someone within the problem area.

His decisions on the battlefield are somewhat removed since squad leaders control individuals, platoon leaders control squads, company commanders control platoons and finally the battalion commander controls

companies/teams. Simply stated; a desire by the battalion commander to place effective fire on a position requires movement of units rather than individuals. The battalion commander must then plan for control of supporting fires (USAF, ARTY, NAVAL, etc.) to insure success in the movement. Management of resources is the key to success.

BATTALION/TASK FORCE

A battalion size unit was selected for this study because of its closeness to the battlefield while still maintaining the necessity to react to world-wide all source intelligence, all supporting arms and the planning/execution of every type operation.

Basic structure of the unit, key equipment and personnel authorizations are located in Appendix A.

Using the battalion/task force as an example allows a look at all aspects of combat and considers planning, coordination and execution of sufficient actions to see the magnitude of decisions necessary.

Methods described later will indicate the complexity of decisions at battalion/task force level and the need for decisionmaking aids. The true use of the combined arms concept with all supporting forces is realized at this level of command.

UNITED STATES DOCTRINE

U. S. doctrine is written in the new camouflage covered "How To Fight" manuals. The capstone manual of this series is FM 100-5, OPERATIONS. This manual provides the "big picture"; a general, world wide view of what we expect to see on the next battlefield and how to cope with that problem.

Chapter three of FM 100-5 tells how the U. S. Army intends to fight the next battle. The U. S. Army's objective is to "win the land battle." Winning that land battle will be dependent on many things but primarily the following:

WELL TRAINED LEADERS

USE OF TERRAIN

BATTLEFIELD DYNAMICS

Generals - Concentrate the Forces

Colonels - Control and Direct the Battle

Captains - Fight the Battle

USE OF FIREPOWER

INTELLIGENCE

KNOWLEDGE OF TACTICS

COMMAND AND CONTROL PROCEDURES

COMBINED ARMS CONCEPT

ELECTRONIC WARFARE

COMBAT SERVICE SUPPORT

Arm; Fuel; Fix; Feed

WEAPONS/EQUIPMENT CAPABILITIES

NIGHT OPERATIONS

OPERATIONS SECURITY

More basic doctrine and tactical probabilities are located in FM 71-2, THE TANK AND MECHANIZED INFANTRY BATTALION TASK FORCE.

SOVIET DOCTRINE

USAITAD Report No. 14-U-76 has been selected to present basic Soviet doctrine. FM 71-2 also contains considerable information on the military operations of the Soviet Army and is an excellent field reference. The following quotes are from USAITAD Report No. 14-U-76.

The Soviet Army believes "that the outcome of conflict can be decided only by the combined efforts of all components ..."

"Standard procedure when advancing is to bypass or envelope strongly held points or areas." The momentum of the attack is maintained with speed, mobility and the attitude to drive deep into the enemy's rear area and allow second echelon forces to destroy bypassed enemy. The Soviet Army masses combat power at the point of breakthrough at the ratio of: "3:1 Infantry, 4 or 5:1 tanks and upwards of 10:1 artillery."

"The predominant theory of Soviet tactical doctrine is that decisive results are achieved only through offensive action." They recognize the importance of defensive action but only temporarily until the offense can be resumed. Surprise, maintaining the initiative and mass at critical points are paramount.

Tanks are employed at all echelons. Exploitation is the principal role of Soviet tanks. In the defense, tanks are held in reserve and used for counterattacks to resume the offense. Tanks are used in both direct and indirect roles.

The Soviet Army usually attacks in two echelons. The three major types of offensive actions are:

MEETING ENGAGEMENT

BREAKTHROUGH

PURSUIT

This thesis will discuss only the breakthrough. Defending against the breakthrough is another "worst case" situation for the U. S. commander. The breakthrough occurs at the place and time Soviet commanders feel they can mass enough forces along a narrow enough front to disrupt the enemy front line and attack to his rear.

Detailed explanations of Soviet doctrine are found in USAITAD Report No. 14-U-76, Military Operations of the Soviet Army.

DECISIONMAKING

Decisions are made of two separate and distinct ingredients. One side is totally logical, factual and void of emotion while the other, although affected by logic, fact and reason is ruled by emotional stimuli.

The premise for this thesis is that the logical side can be assisted greatly by decisionmaking aids. No attempt will be made to control the emotional side. Recognition of the importance of psychological stimuli is necessary. Detailed discussion of these stimuli is located in Appendix C. The purpose of this Appendix is to give the reader an appreciation of pressure felt by a commander. Many quotations are used to show the universal agreement that this statement is true.

Although many decisionmaking aids are available, they are not coordinated, consolidated and efficient for the busy battalion commander. Each method by itself is helpful but repetition among the systems reduce

their overall utility. Consolidation, evaluation and production of a system which maximizes efficiency and reduces redundancy is necessary.

This system would relieve the commander of some of the uncertainties and risks he faces when he decides with incomplete information. Armed with complete facts and a logical conclusion, emotion can be understood and applied with somewhat better objectivity.

COMPLEXITIES/PARAMETERS

Fighting outnumbered, as the U. S. expects to do in any future war with the Warsaw Pact, causes many problems that would not exist if equal forces opposed each other. Counting forces, inventorying equipment and other tangible methods of determining strength is easier to understand for most. Historically, this method has been the accepted norm. If this method were used now, it would be difficult to defend the NATO claimed ability to defend against a numerically superior Warsaw Pact.

Because of this difference, the mobile and position defenses are now history and have been replaced by the evolution of the active defense.

Intangible aspects such as superior technology, personal initiative and superior tactics are the factors that are expected to deter an attack.

The active defense was devised to maximize NATO strengths and minimize those of the Warsaw Pact. Through correct, timely and decisive application of forces and weapons at the right time and place and in the right amount, it is believed that the active defense will succeed against the numerically superior Warsaw Pact forces.

The active defense has also changed the way leaders must react to situations. Centralized control of small units is impossible at high

command levels. Decisions that were made at division level before are now made at brigade, battalion or even company/team level. Since decisions in close combat must now be made by platoon, squad and even tank/vehicle commanders, the battalion commander must be well ahead of the situation in order to influence the action by moving companies/teams to advantageous positions. He must further plan for, coordinate with and establish control of all supporting arms to support by fire the movement of units.

His decisionmaking process is multiplied many times in complexity by the multitude of variables under which his decisions must be rendered, i.e., visibility, terrain, OPFOR, tactics.

Ideally, a battalion commander could follow the sequence described in Appendix D. However, this sequence was developed under a scenario which provided unrestricted visibility, ideal terrain for excellent fields of fire/observation and the assumption that fire support and communications with that support were also unrestricted. Use of the "sequence" method of decisionmaking is valuable only if the commander wisely considers other variables and applies careful thought rather than dogmatically stumbling through his prepared sequence to ultimate failure.

The multitude of decisions a battalion commander must make are shown in list form in Appendix E. It is important to note that although the list is long and laborious to read, Appendix E is only Chapter 8-6, Defense and Chapter 10, Control and Coordination of Operations, of the entire ARTEP 71-2. This long list is provided only as an example of how the battalion commander must break down each task before he can initiate his decisionmaking process. Decisions under each task may need another decisionmaking aid to insure efficiency. For example, the first item

listed under Task 8-6-A and 10-1, (Conduct mission analysis) might need a checklist to insure that all aspects of the mission were considered. Later under the same tasks, conduct terrain analysis might best be satisfied by using the first part of the thirteen step method taught at the Command and General Staff College, Fort Leavenworth, Kansas. Further analysis will appear later in Chapter 4.

CHAPTER 2

WHAT VALUE ARE DECISIONMAKING METHODS?

Appreciation for the need of decisionmaking methods is a prerequisite for developing an organized model to follow when confronted with difficult decisions. Lack of that appreciation places all leaders into an unorganized, non-standardized position of trial and error. Commanders are then subject to only their own experience level and must continue without centralized, doctrinal, recommended options.

Are decisionmaking aids necessary? If so, why are they necessary? Can they be categorized by event, chronology or situation?

Even when confronted with the specific task at hand, commanders react differently to situations because of their individual differences and styles of command. Appendix E points out, in list form, the multitude of decisions which must be made. Some items in the list are single requirements while others require an extensive analysis or evaluation before they can assist the decisionmaker. The complex items require either a phenomenal memory or some method that may assist the decisionmaker in his memory requirements.

The use of decisionmaking aids is widespread but neither consolidated nor coordinated and a result of a detailed study of the entire decision-making spectrum. The result of this fact is a redundancy of information, an extreme amount of bulk to use many aids, and an exorbitant cost to place these aids in the hands of the user.

Categorization of decisionmaking aids into some sequence would allow proper indexing. These could be indexed by event or situation. By establishing such an index, the leader could easily find the most desirable decisionmaking method for that event or situation.

For example, use of a operations order format would be worthless for a terrain analysis and vice versa. These methods should be alphabetically indexed to allow the user easy access.

Organization and planning ease the pressure on the decisionmaker. Decisionmaking aids to assist the commander allow him to prepare a more complete plan.

CHAPTER 3

METHODS AVAILABLE

It should be apparent to the reader by now that the commander has a very difficult job. He alone must make the final decision that will be executed.

He has selected his vocation regardless of the level of responsibility or difficulty involved.

The psychological pressures are a known fact. They are ever present and have a definite effect on the decisionmaker.

The decisionmaker, through years of study plus trial and error, has developed many methods to assist him in making difficult decisions. These methods vary with changing situations and different commanders. In some instances, only a reminder of sequence is necessary to insure that the commander considers all available facts before deciding on a course of action. At other times, complex calculations must be made to determine the risk involved and the probability of success.

The methods described in this chapter are not all inclusive and each is not an answer for all situations nor will all be used by every commander. These methods help to eliminate or suppress the emotional, "human" element in decisionmaking. They range from a simple checklist or memory card to complex, computer assisted war games.

The commander will invariably temper his decisions because of his emotional involvement in the situation. Using the methods described herein and others devised to solve specific problems will allow the commander to

at least start with factual, unemotional information. From that point, each commander will react based on his personality, temper^{ment}, character and training.

BATTLE BOOK¹

The Battle Book was designed for the battalion, task force, company and team commander. The book is helpful in analyzing a tactical situation. The facts derived can be used to formulate tactical decisions based on facts and risk analysis. It was designed originally to analyze combat operations in V Corps, FRG. Flexibility exists within the system to use the method in any area and can be adapted to offensive operations by reversing the roles of Red and Blue forces. (See note in Appendix F, Section 2, page 1)

The Battle Book contains two sections. Section one deals with operational planning while section two is the actual method of calculation of the risks involved in battle. A short excerpt of section one and two can be found in Appendix F.

UTILITY

Conducting operational planning with the checklist in section one will not explain how to perform each task but it does remind the reader of both the necessity and the sequence of the action.

Section two requires terrain analysis, weapons analysis, determination of enemy speed, study of enemy formations, selection of avenues of approach and other decisions dependent upon action of the players. The battle book then depicts how a battle can be graphically portrayed in

chronological order for further study.

The maximum utility is that the battle book method produces an end result that tells the commander whether or not he has sufficient forces to service the impending threat. It assists the commander in determining the timing of necessary maneuvers. Detailed study of the aforementioned items will allow the commander to understand what must take place when the battle commences.

"War Gaming" the battle before it starts will assist the commander in prepositioning ammunition, determining enemy closing speed, selection of positions, fire and maneuver, placement of obstacles and barriers and planning available time.

ADVANTAGES

The Battle Book is simple, concise, has been tested and can be used either as a teaching tool to show the sequence in which tasks should be performed or as an actual representation of a real life battle position or strongpoint.

The key advantage is that it does achieve the end result of assisting the commander in determining likely avenues of approach, defensible terrain, weapons effectiveness, enemy speed and probable maneuver.

DISADVANTAGES

Adjustments must be made according to the current situation. The Battle Book depicts weapons at maximum range and assumes good visibility. Night, dust, fog and rain will change decisions because of the shortened range of weapons due to lack of visibility.

If used to represent a real battle position or strongpoint, considerable time and/or expenditure of manpower is necessary to complete adequate study of the terrain to satisfy requirements of the Battle Book. However, this time must be spent on any defensive position if prepared properly. The Battle Book simply consolidates the process and makes it more intense.

ARTEP²

The Army Training and Evaluation Program (ARTEP) is a detailed listing of tasks that must be performed correctly by a unit to be considered combat ready.

Confusion, sometimes, is experienced by an individual who considers only part of a task and is then confronted with another before deciding on the first. This situation will invariably take place on the battlefield but, unless in heavy contact, is the exception rather than the rule. Study of the possible tasks which may occur during an operation will allow the commander some valuable time to consider options available to him. Stumbling blindly into a complex relief in place or night withdrawal without a prior study of possible actions is foolish for even the most competent and confident commander.

The ARTEP is orderly, concise, complete and is a study by many minds during less trying times than combat. Constant referral to it prior to execution of plans will insure that obvious, important factors are not forgotten.

The document is designed as a standard to which a unit should train. It is performance oriented training and therefore directs the unit

and the commander toward achieving success on combat oriented tasks.

If the document were to be used as a decisionmaking aid, each task must be broken down into sub-tasks and decisions necessary to accomplish the task. Appendix E accomplishes this for the Defense and Control and Coordination of Operations portion of ARTEP 71-2. This breakdown outlines the actions that a commander must consider, plan and eventually execute. It does not attempt to tell the commander how he should execute a task or even the sequence in which it should be accomplished.

Other methods can be used intermingled with the sequence of tasks to insure efficiency. These other methods might include a format to write an operations order or fragmentary order, a checklist to conduct coordination and/or a template to indicate weapons effectiveness and ranges.

UTILITY

The ARTEP can best be used in its current form as a training and evaluation format. It offers the task to be accomplished, the conditions under which it must be performed and the standard which the unit must achieve.

If adapted to a list form such as demonstrated in Appendix E, the document could be used as a memory aid to assist the decisionmaker in considering necessary data when faced with a difficult task. This list, coupled with other aids would insure consideration of all main points.

ADVANTAGES

The ARTEP is already prepared for most units. Adapting the necessary decisions to list form would be a minimal task. Time and experience would perfect the list. The ARTEP is well indexed by task. Tactical decisions would be broken into type operations. The user need only know what type operation he is conducting, i.e. defend; attack; delay, to find the data needed.

DISADVANTAGES

The ARTEP is very bulky in its current form. This is not a great problem for training but a compact list form must be developed for use in the field.

The ARTEP is dependent on memory or other aids in order to be totally effective. It by itself gives general information to the user while other aids are used to determine detailed information.

RELATIVE COMBAT POWER ESTIMATOR³

The Relative Combat Power Estimator is a necessary evil for risk analysis. Conducting the estimation is an expenditure of time but without it, the active defense may fail.

To fight outnumbered and win, the outnumbered force must be able to foresee what his opponent will do. Doctrine and history are a good example of what a unit will do in the future. Knowledge of Soviet doctrine will assist the U.S. commander and his staff to array the enemy as they think he will face them. Current intelligence joined with knowledge has

proven valuable in guessing the enemy's next move.

The estimation of relative combat power demands an effective terrain analysis (method covered later in this chapter). The sequence of events follows.

1. Select likely enemy avenues of approach.
2. Rank order the avenues of approach according to value to the enemy and therefore danger to friendly forces.
3. Estimate the size of the attacking forces on each avenue.
4. Translate enemy size to U. S. equivalent sizes.
5. Apply acceptable combat ratios to determine how many friendly units are needed.
 - a. CFA (1:6)
 - b. FEBA (1:3)
 - c. Second Echelon Counter Force (1:3)
 - d. Rear Area (1:3)
6. Determine number of units necessary by totaling the above estimates.
7. Determine number of units available by looking at the task organization.
8. Determine number of units short or over necessary for the defense.
9. Conduct risk analysis.
10. Assign units to most dangerous avenues of approach.
11. Allocate command and control headquarters.

This sequence allows the commander to make decisions that are based on a quantifiable risk analysis. Correct assumptions and thorough knowledge will help the commander to succeed.

UTILITY

The Relative Combat Power Estimator is used when enemy offensive action is imminent. This estimator format is obviously designed for the defense. An attack estimator would be simple to construct. The estimator allows the commander to risk analyze courses of action to determine his best choice. It allows a study of avenues of approach, size of each approach, rank ordering of each approach and an array of the enemy.

ADVANTAGES

The Relative Combat Power Estimator is simple and quick. It allows a risk analysis of courses of action. No special equipment is necessary except the format.

DISADVANTAGES

The Relative Combat Power Estimator does not consider mission analysis, is dependent on the quality of the terrain analysis and fails to address special missions (retain or other restrictive missions).

The risk analysis is very subjective and will differ greatly among battalion commanders because of varying experience levels and tactical opinion.

In the process of arraying friendly forces, only combat maneuver units are considered although combat support and combat service units will have a significant effect on the outcome of the battle.

GRAPHIC TRAINING AIDS

The U.S. Army has developed graphic training aids to assist the decisionmaker. They include such things as ranges, effect on targets, advantages, disadvantages, possibility of hit and possibility of kill.

Variations of these aids are also used to present the planning format for operations and fragmentary orders, passage of lines and link-up procedures.

UTILITY

Graphic Training Aids are used as handy pocket references in a field/combat situation. The devices are normally made of plastic so therefore are very durable and waterproof.

They can be devised to offer ranges, rates of fire, types of ammunition, probabilities of hit/kill and an infinite amount of other information.

ADVANTAGES

Most Graphic Training Aids are durable, weatherproof, simple, concise and efficient. Those that are not are normally for training only and are not used in the field or in combat.

DISADVANTAGES

Much of the information is repetitious with other effective decision-making aids. The aids are narrow in scope and cover only specifics. Since they are limited to facts only, they cannot offer format and a logical thought process that the user might follow.

DECISION TREE/MATRIX

When attempting to quantify and evaluate several courses of action, a commander or his staff might construct a tree or matrix to determine relative merits of each course.

Many times, even in combat, there is time to use a scientific approach to solve a combat problem. By placing proper weight or value on several courses of action and weighing those courses against the forces of nature (those variables over which the decisionmaker has no control), decisions can be made by pure facts. Any alteration of those facts will again be a product of personality of different commanders. Given the same problem and even the same values on a matrix, different commanders may come up with dissimilar solutions. This does not negate the value of the system. The system only gives the commander a starting point with basic facts. It is still he, the commander, that must decide on a workable solution.

UTILITY

Anytime a commander can quantify opposing variables, a matrix or tree can be used. If too many variables are used on the same tree or matrix, the method becomes confusing and complex.

As an example, when attempting to determine the best avenue of approach, the commander may be faced with a situation that variables preclude the use of a matrix/tree between those two avenues. These methods may be used to eliminate obvious choices, then the two main opposing avenues could be closely studied.

ADVANTAGES

Decision trees and matrixes are valuable in obtaining a numerical score which can be quickly discussed and agreed upon. The method is relatively quick and simple. Experience will allow the user to adapt many decisions to quantifiable results.

DISADVANTAGES

The decision tree/matrix requires that the answer be quantifiable. The process of quantification demands excellent judgment on placing values on parts of the problem. Values are subject to differences of opinion. This is not a problem unless the decisionmaker attempts to prove his logic to another. These methods are purely method and add no information to the decision itself.

3"x5" CARD

Many commanders rely on a simple 3"x5" card to help them to remember important information.

Summarized bits of information can be neatly printed or typed on the card. The cards can then be placed in sequence to indicate when the decision will be necessary. Changes in the situation may require "shuffling" of the cards or even re-use of particular cards since some decisions are repetitive.

It is much more likely that many cards will be used by the commander. The 3"x5" card is probably the simplest of all methods but is an effective tool to remind the commanders of numbers, statuses, regulations, and goals

just to mention a few. It allows him to always have current information at his disposal and places the work on the staff rather than the commander. This allows the commander to use his available time for decisions versus memorization.

UTILITY

The commander may decide to carry certain formats with him, such as operation order, fragmentary order, passage of lines, fire support coordination to list only a few. He may use the cards as reminders of recurring information such as personnel authorized/assigned, vehicles authorized/assigned and missions currently being executed simultaneously.

ADVANTAGES

The 3"x5" card is extremely simple and totally flexible. Imagination is the only limiting factor with the card since it starts blank and contains only the information the user needs. The cards are readily accessible and can be developed to user specifications at the local level. The cards can be re-used as decisions must be repeated.

DISADVANTAGES

The 3"x5" card is worthless without the imagination of a commander/staff officer. The cards are not weatherproofed unless specially treated. Use of the card without referring to other methods of format, doctrine or SOP will prevent standardization and the efficiency that comes from standardization. An example of this would be a ground commander in an air assault unit using a 3"x5" card to assist in pickup zone operations but simultaneously

violating the division SOP. The card may assist the ground commander but would weaken coordination between the lifted and the lifting unit and actually decrease efficiency between the two units.

SEQUENCE

Most commanders can remember the important aspects of a military operation. Leaving out seemingly small, insignificant things degrade the operation from professional to only satisfactory.

Preparation of a time sequencing of the operation is occasionally all that is necessary for success. If time is critically short, time sequencing may be the only aid that can be used in the time available.

UTILITY

Sequencing is described in detail in Appendix D. One must remember though that a sequence is subject to certain criteria. Changes in those criteria can and probably will change the sequence of events.

ADVANTAGES

Sequencing gives the commander the ability to "war game" a tactical action from its start to finish. He can "picture" in his own mind what the enemy might do. Although he cannot be dogmatic and follow his sequence blindly, the system does answer many questions and offer many alternatives at each decision point.

DISADVANTAGES

The scope of the sequence is very narrow. The sequence is altered drastically by change in criteria and assumptions under which the sequence was devised.

TERRAIN ANALYSIS⁴

Before defending terrain, the commander must critically analyze his area of responsibility. The following method is one efficient way to conduct such an analysis.

1. Identify disruptive terrain along FEBA that restricts lateral movement. (Built-up areas, river confluences, steep slopes, etc.)
2. Determine initial avenues of approach by marking gaps between disruptive terrain.
3. Determine enemy objectives of the day and intermediate objectives.
4. Determine blocking terrain. (Impedes enemy's movement)
5. Extend the avenues of approach from the FEBA to the objectives and from the FEBA to the enemy.
6. Refine avenues of approach. (What size Soviet force, using breakthrough frontage, can use each route?)
7. Determine key terrain.

This method should be followed by the Combat Power Estimator Method.

UTILITY

Obviously, the method is used to give a methodical, complete analysis of terrain. It is of narrow scope and is specific.

ADVANTAGES

The Terrain Analysis Method allows the user to systematically inspect the terrain rather than just stare at it. The user is looking for specific information to which further judgment may be applied. The method eliminates the possibility of forgetting some important point.

DISADVANTAGES

The method is specific and not adaptable for other types of action. It is specifically defensive. A method like this would be required for each type action.

SIMULATION

This method covers an extremely wide spectrum. It runs from the very simple sandbox or even stick drawings in the dirt to the elaborate, expensive and complex computer assisted battle games (BATTLE/CATTS/CAMMS).

The old cliché, "a picture is worth a thousand words" is the basis for this invaluable method. Commanders can now make decisions in close to realistic and occasionally even real time scenarios and see results based on historical data that has been gathered.

UTILITY

The simulation method can be used at any time and is limited by the availability of equipment only. Lower echelon commanders usually are not allowed the luxury of computer assisted games but have access to non-computerized games like Dunn-Kempf and simpler methods such as the sandbox.

Use of games such as Dunn-Kempf are of extreme value to the squad and platoon leader since it places a platoon against a Warsaw Pact opponent. Battalion and higher commanders can still use simple methods like the sand-box and could even play the Dunn-Kempf game to understand the challenges faced by their subordinates. However, they could best be challenged by games designed for their own level of command such as Battle, CATTs and CAMMS.

ADVANTAGES

Simulations allow the decisionmaker to see the situation. In most instances, he can see the battle much better in a simulation, than he could in an actual battle. The simulation gives him a mental picture that will help him later to formulate decisions on similar situations.

DISADVANTAGES

Simulations cannot possibly offer the total realism of combat. Decisions are made more on pure logic and the emotional strain of death or injury are not felt. The U. S. Army Ranger School uses the patrol as a teaching vehicle. This is a form of simulation. Although fear of death from enemy fire is absent, all other emotional factors do exist. Fear of failure or even physical fear, hunger, fatigue and peer pressure are a few factors that cause decisions to be much tougher than in a warm, safe, well lighted classroom. Removal of these factors from the commander's mind, causes him to think clearer and react in a much more predictable manner.

ENDNOTES

1. Commander's Battle Book With Battle Book Calculus. Fort Ord, California: BDM Corporation.
2. Army Training and Evaluation Program 71-2. Washington, D.C.: HQDA.
3. Introduction to Defensive Planning. USACGSC, Course P312-1, 1977-78.
4. Ibid.

CHAPTER 4

ANALYSIS/COMPARISONS

The purpose of this chapter is to further analyze the usefulness of the example methods briefly explained in Chapter 3.

It is quite obvious that many more decisionmaking methods exist than are shown in Chapter 3. Some have been exploited at Department of the Army level and produced in sufficient quantity to assist the decisionmakers. Others are informal methods that are only known to their originators.

If the reader can accept the usefulness of each method and see that through research, analyzation and consolidation that an efficient index to decisionmaking aids is possible; that project can become a reality.

"Muddling through" will cease to be a common decisionmaking technique. A methodical, efficient decisionmaking process is possible for all. Experience gained by our predecessors can be conveyed to present day leaders. Trial and error can be the exception rather than the current rule. Decisionmakers will not be required to make each and every mistake themselves. They can follow accepted procedure as a general guide and then let their conscience affect their decision.

Obviously, every situation cannot be covered. We should not be so foolish as to think this. Personal experience and discussion with colleagues indicates that although we have spent a great amount of time and money on this subject, the last simple step of indexing and consolidating has not been done.

Much of the information in different aids is proven redundant when placed with another aid. This can be eliminated by establishing a standard, indexed guide to which all future and existing aids must give support. This is not really a drastic statement when one stops to realize that the outcome will assist everyone.

Service members live in an atmosphere that is supposedly well organized. To that, one must apply memories of all the graphic training aids encountered over the years of service. Each one devised to assist the leader in his ultimate challenge -- decisionmaking. However, organization of all into an efficient system has not been done.

The following analysis will attempt to consolidate only a few methods and show how they can be used together. Some methods are general in nature and wide in scope. Examples selected to show this are the ARTEP and the Battle Book. Those that are narrow in scope and specific in nature will be incorporated to show their usefulness.

The ARTEP is wide enough in scope to encompass all those major tasks required to accomplish the mission. It is, however, so general that it does not lead the user to a conclusive decision.

The Battle Book goes one step closer to specifics by entertaining only the defensive portion of combat. This would relate to Chapter 8 of the ARTEP.

Within the ARTEP, there are an infinite number of times that other decisionmaking methods can and should be used. The following are shown for illustration.

1. Task 8-6-A Prepare Plan and Task 10-1 Develop Plan Based on Mission.

a. Select Key Terrain. The Battle Book and Terrain Analysis are both useful methods but redundant. A consolidation of methods would bring the desired results.

b. Issue warning/operation order. Graphic Training Aids (GTA) in the form of formats and the 3"x5" card in the form of a pocket reminder are actually one and the same. The only difference would lie in who prepared the pocket reminder. A reminder prepared by a training aids facility would also be a GTA. The 3"x5" card retains its value only because of its flexibility to the needs of the commander.

c. Consider opposing courses of action. The Battle Book allows the user the chance to "war game" each course of action from its start to finish.

The Relative Combat Power Estimator (RCPE) is used to specifically determine the ratio of friendly to enemy forces. The RCPE should be used as a prelude to the analyzation of opposing courses of action.

Developing a sequence of expected action either before or preferably during the Battle Book "war gaming", will help the commander to "see the battlefield".

Use of a Decision Tree or Matrix is also possible after the Battle Book "war gaming" is complete. After mentally fighting the battle, the commander can then quantify the advantages and disadvantages of each course of action. This quantification could be best done by considering another Graphic Training Aid which lists important aspects of a course of action. It could also come from personal combat experience of the commander or from a simulation like Dunn-Kempf, Battle, CATTS or CAMMS. Experience by actual combat or through simulation is the only way to form judgment on what

values can be placed on each aspect. To do more would be preaching dogma to the leader and would take away his initiative and ingenuity. There is no intent to suggest that teaching dogma rather than doctrine is correct. On the contrary, giving the commander all the facts available will give him additional time and freedom of action rather than tie him to the few alternatives that he may be able to remember in his time of excitement.

2. Task 10-9 Manage CSS.

a. Arm the Systems. This sub-task was selected as an example because it is administrative in nature rather than combat. However, decision-making aids are still valuable.

In this case, a form of terrain analysis is necessary. Main and alternate supply routes must be planned based on knowledge of the best routes and also the disposition of friendly forces. Determining possible enemy avenues of approach may dictate the method of keeping ammunition forward.

Graphic Training Aids such as formats can be used to simplify the resupply effort.

More and more emphasis is being placed on simulation of the logistic effort. Games such as LOGMOD and the logistic effort in CATTs/CAMMS indicate this to be a valuable aid in teaching the decisionmaker.

SUMMARY

Comparison of the different methods could obviously go on until all are considered. The task of consolidating the different methods is one of time more than anything else. Each method is relatively simple.

They are relative only to the fact that they all pertain to military subjects and will be simple to those that have had military training.

No attempt has been made to complete the task of consolidating and evaluating all decisionmaking methods ever devised.

Decisionmaking methods/aids are used by all at one point or another. The concept is a very popular one. Indications of its popularity are found in Appendix G. A sampling of the students and instructors at the Command and General Staff College (CGSC) at Fort Leavenworth, Kansas indicates the following.

1. The decisionmaker does need aids/methods to assist him/her to formulate logical conclusions.
2. The decisionmaking aids now available are not well organized, consolidated and efficient.
3. Decisionmaking aids now available are not adequate for the needs of the commander.
4. A reference book should be devised which would consolidate, organize and maximize efficiency of those methods already available.
5. Decisionmaking aids should address only the factual side of the decisionmaking process. The emotional side has too many variables to properly control.
6. Decisionmaking aids are redundant and therefore bulky, making them difficult to keep available until needed.
7. The production of a reference book on decisionmaking methods will not indicate to leaders which should be memorized and which may use memory aids such as formats and lists.
8. The use of aids/methods does not prevent the commander from

applying "gut feeling" to his/her decision.

9. Decisionmaking aids relieve the commander of much emotional pressure by giving him/her a logical, factual basis for the decision.

10. Most would personally use a book that was efficiently indexed to refer the reader to a decisionmaking aid that would assist him/her to a logical/factual conclusion.

Numbers one and ten especially indicate an overwhelming desire for assistance on present methods.

Decisionmaking aids are valuable only if they increase efficiency and/or save time. The ability of finding the correct method along with ridding the system of redundancy will make decisionmakers more confident and competent.

CHAPTER 5

CONCLUSIONS

1. DIFFICULT TASK. The battalion commander is subjected to an extremely difficult situation and will be unable to consider all facts necessary to insure perfection in making decisions unless he is assisted by decisionmaking aids. Although he may know about and fully understand an operation, he may forget critical decisions necessary to influence the combat action at precisely the correct time.

2. INCREASED TECHNOLOGY. Due to increased technology of greater range, accuracy and lethality of weapons, the battalion commander must work through a constant overload of information although other pressures do not decrease when one takes command. Those pressures, in fact, increase with assumption of command.

3. FAMILIARIZATION VERSUS PROFICIENCY. Commanders can no longer be only familiar with subjects; they must know them in detail, pass them on to subordinates and demand proficiency.

4. U. S. ARMY RESPONSIBILITY. The current method of education is inadequate. Incorrect assumptions are made that all officers, through self study, are remaining current. Because of bureaucratic shuffling of excess paperwork, on duty education is nearly impossible. Tactical seminars are nearly non-existent. Debates on tactics are normally fruitless because so few have a solid base from which they debate. Dogma is not the answer.

Education is the answer and tactical seminars could be the evaluation answer. During these seminars, opinions could be expressed so that all may learn. These seminars must have a starting point. The starting point should be a systematic, indexed reference book to which all look for guidance.

If a decisionmaking method is worthy of being produced, it should have to stand the test of scrutiny from all. The method must add substance rather than redundancy or not be accepted. Local production of methods must first seek approval into the system.

5. WAR GAMES. War games, although available at service schools, are not widely used elsewhere in troop units. An annotated bibliography of these games would allow commanders to determine their needs.

RECOMMENDATIONS

1. BATTLE REFERENCE BOOK. The term Battle Reference Book as used here bears little or no resemblance to the current Battle Book and differs tremendously in scope.

The U. S. Army should direct further research on this subject. Research must indicate:

1. What tasks must be accomplished? This is efficiently started by development of the ARTEP manual.

2. What decisions are necessary to accomplish each task? Each task must be examined as Chapter Eight and Chapter Ten of ARTEP 71-2 was in Appendix E.

3. Which decisionmaking method(s) will best satisfy the requirement

to analyze this decision? The answer should be noted with the task/question. This will offer a task oriented index.

Once this research is complete and the accompanying notes have been accomplished, each decision must be placed in alphabetical order. This now offers the user a second type of index.

The product would be a reference book that is useable and current. Changes to it should be handled under the current pinpoint distribution system.

Each commander now has a reference book to assist his learning process. He is free to add his own methods to his book and to submit same for publication if, through experience, he finds it to be better than an existing method. Headquarters, Department of the Army can maintain centralized control without diminishing the imagination and ingenuity of soldiers in the field.

2. TACTICAL SEMINARS. A minimum of one two-hour session per week should be required for a tactical seminar. This seminar should be held as sacred and not abused. The seminar could be held at any level of command as long as it was open to all for discussion. Amazing things happen when Major Generals discuss tactics with lieutenants and captains. Better understanding off the battlefield will produce tremendously improved results on the battlefield.

3. DOGMA VERSUS DOCTRINE. Doctrine must remain general and flexible. Each leader at all levels must understand that freedom of decision is allowable and desireable. However, doctrine must be taught to give leaders a general direction in which to go. Variety in decisions

will keep the enemy confused on future courses of action. Otherwise, leaders "muddle through" decisions and repeat mistakes that had already been tested in history but not passed on to current leaders.

4. WAR GAMES. War games are extremely valuable. The computer assisted games would be a definite asset to each U. S. division as well as at service schools.

5. ATTITUDE. A change in attitude is necessary. Too many will not admit lack of knowledge in tactics because they fear punishment through the Officer Efficiency Report. The answer, "I don't understand" should be a welcome challenge to any commander to teach that subordinate. Commanders must also take part in seminars. Without command support, the system is doomed to failure.

FINAL CONCLUSION

Training and development of decisionmaking aids made available to leaders in an organized, efficient manner will insure professionalism, personal satisfaction, efficiency and ultimately -- VICTORY.

APPENDIX A

ASSETS AVAILABLE

Because of all the possible variations of task organization, only "pure" units are shown in the following diagrams. Specific tailoring of the units involved will be as a result of leadership style and the tactical situation.

ORGANIZATION AND KEY EQUIPMENT

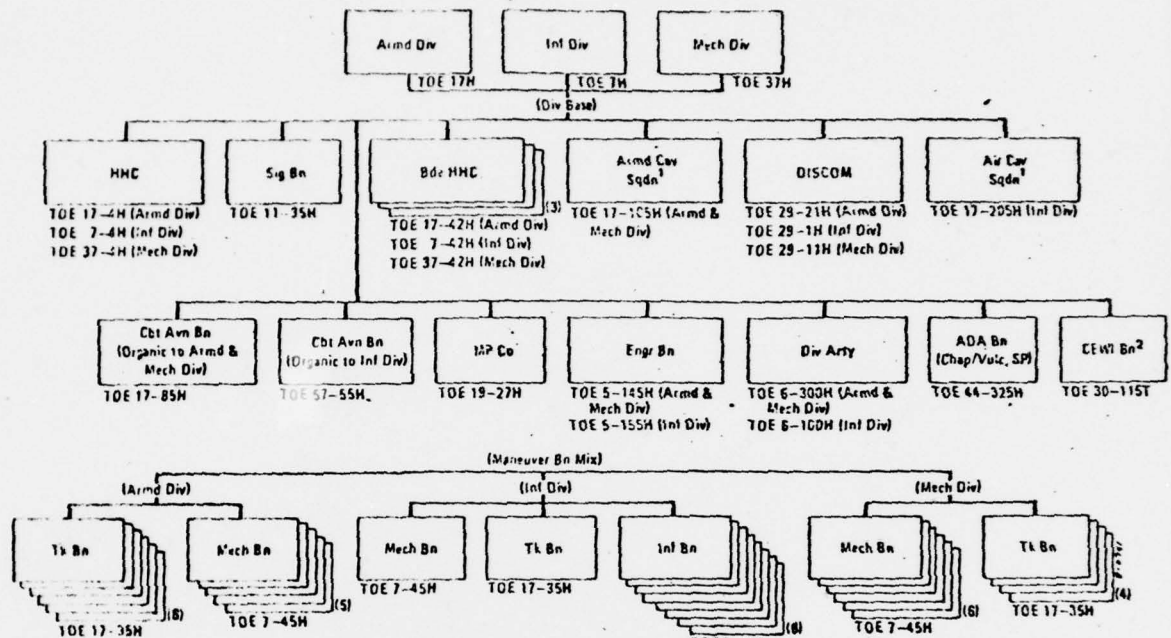
The following diagrams are representations of the units involved in the proposed hypothetical situation. The first depicts how a U. S. mechanized battalion fits in the division structure. The mechanized battalion follows with a breakout of personnel assigned and major items of equipment. Each different type company within the battalion is then shown.

The diagrams of Soviet units of regiment, battalion and company size also show personnel strengths and key equipment.

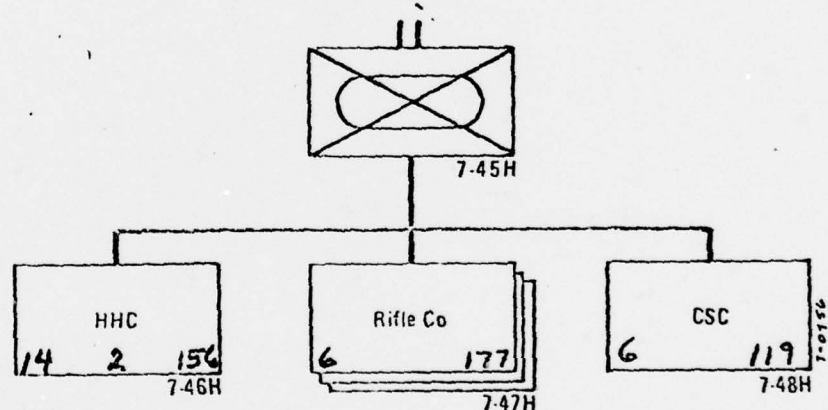
The U. S. information is derived from the TOE of the mechanized Infantry battalion. The Soviet information comes from Combined Arms Combat Developments Activity (CACDA) HB 550-2 (Final Draft) 1978.

ARMORED, INFANTRY, AND MECHANIZED DIVISIONS

A-2

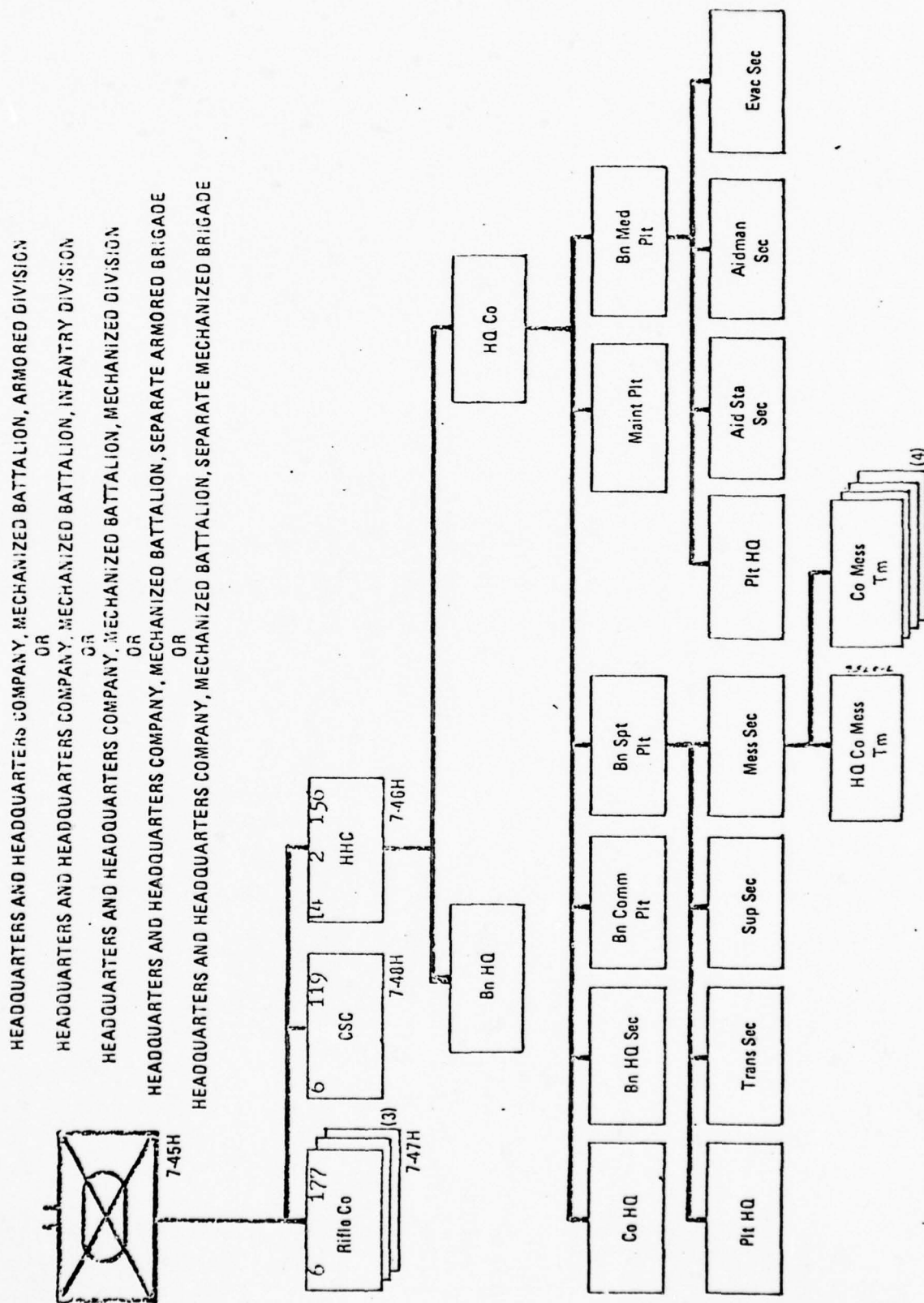


US MECHANIZED BATTALION

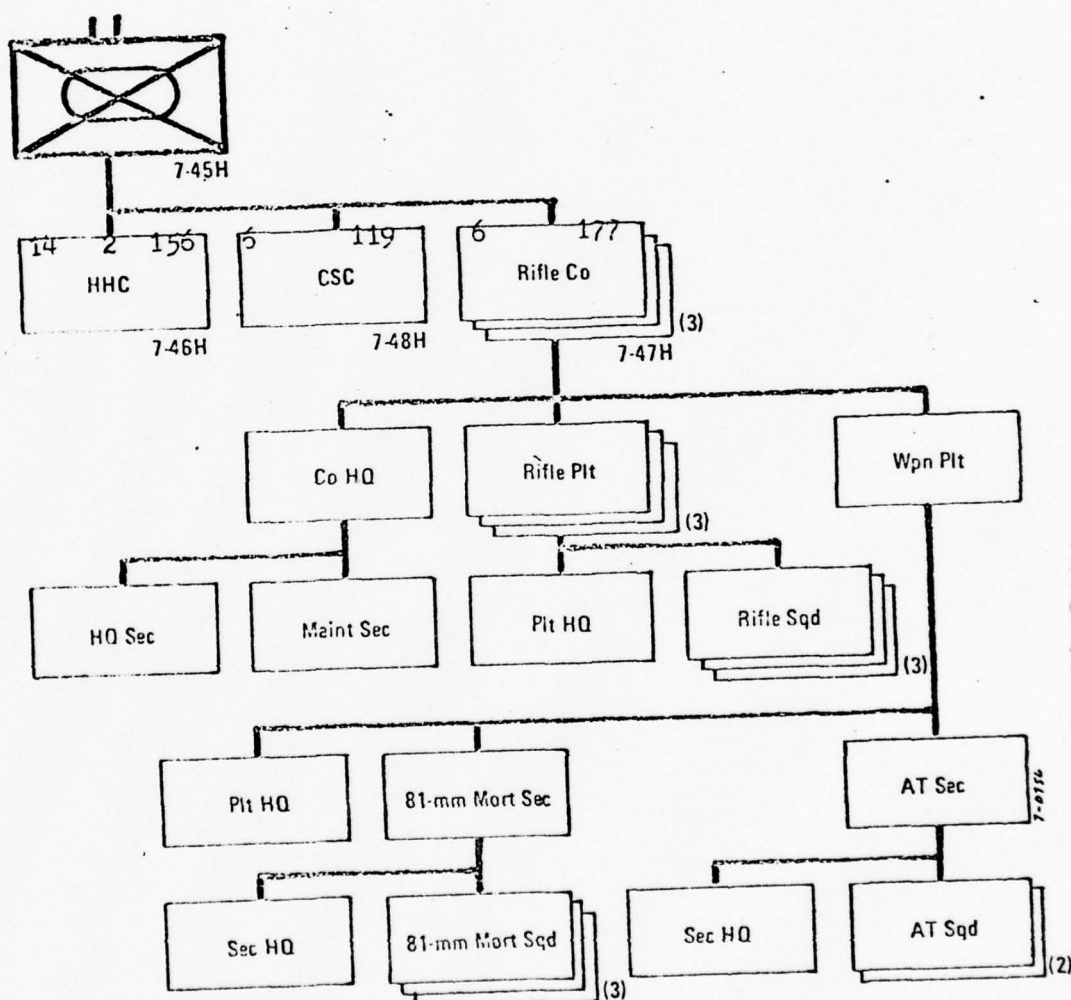


KEY EQUIPMENT

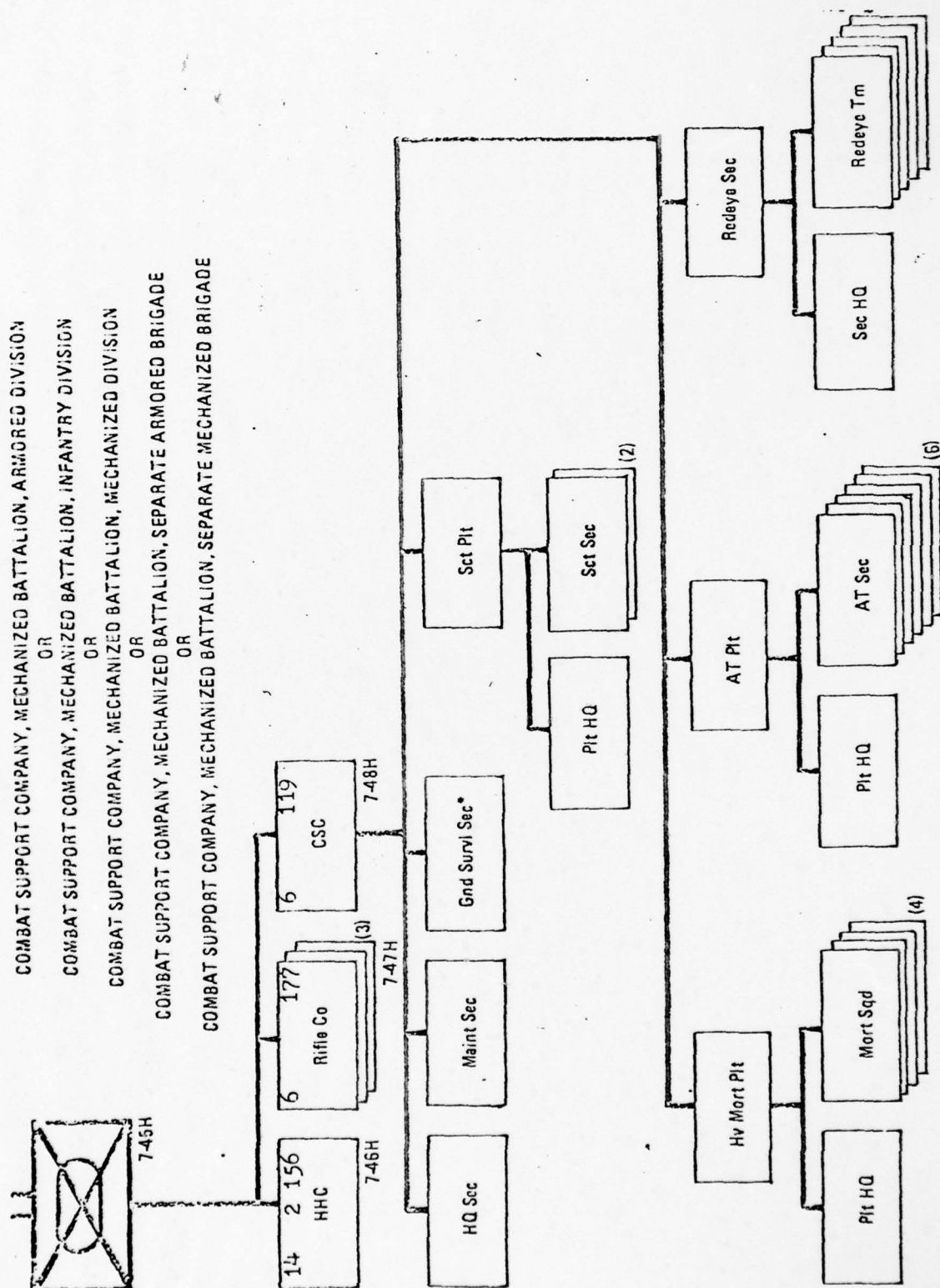
CARRIER, COMMAND AND RECONNAISSANCE	15
CARRIER, COMMAND	6
CARRIER, PERSONNEL	63
CARRIER, GUIDED MISSILE (TOW)	12
CARRIER, 81MM MORTAR	9
CARRIER, 107 MM MORTAR (4.2 inch)	4
MACHINE GUN, .50 CAL (GROUND MOUNT)	26
MACHINE GUN, .50 CAL (VEHICLE MOUNT)	91
MACHINE GUN, 7.62 CAL	49
RADAR, AN/PPS 5	4
RECOILLESS RIFLE, 90 MM	18
RED EYE AIR DEFENSE MISSILE TEAMS	5



RIFLE COMPANY, MECHANIZED BATTALION, ARMORED DIVISION
 OR
 RIFLE COMPANY, MECHANIZED BATTALION, INFANTRY DIVISION
 OR
 RIFLE COMPANY, MECHANIZED BATTALION, MECHANIZED DIVISION
 OR
 RIFLE COMPANY, MECHANIZED BATTALION, SEPARATE ARMORED BRIGADE
 OR
 RIFLE COMPANY, MECHANIZED BATTALION, SEPARATE MECHANIZED BRIGADE



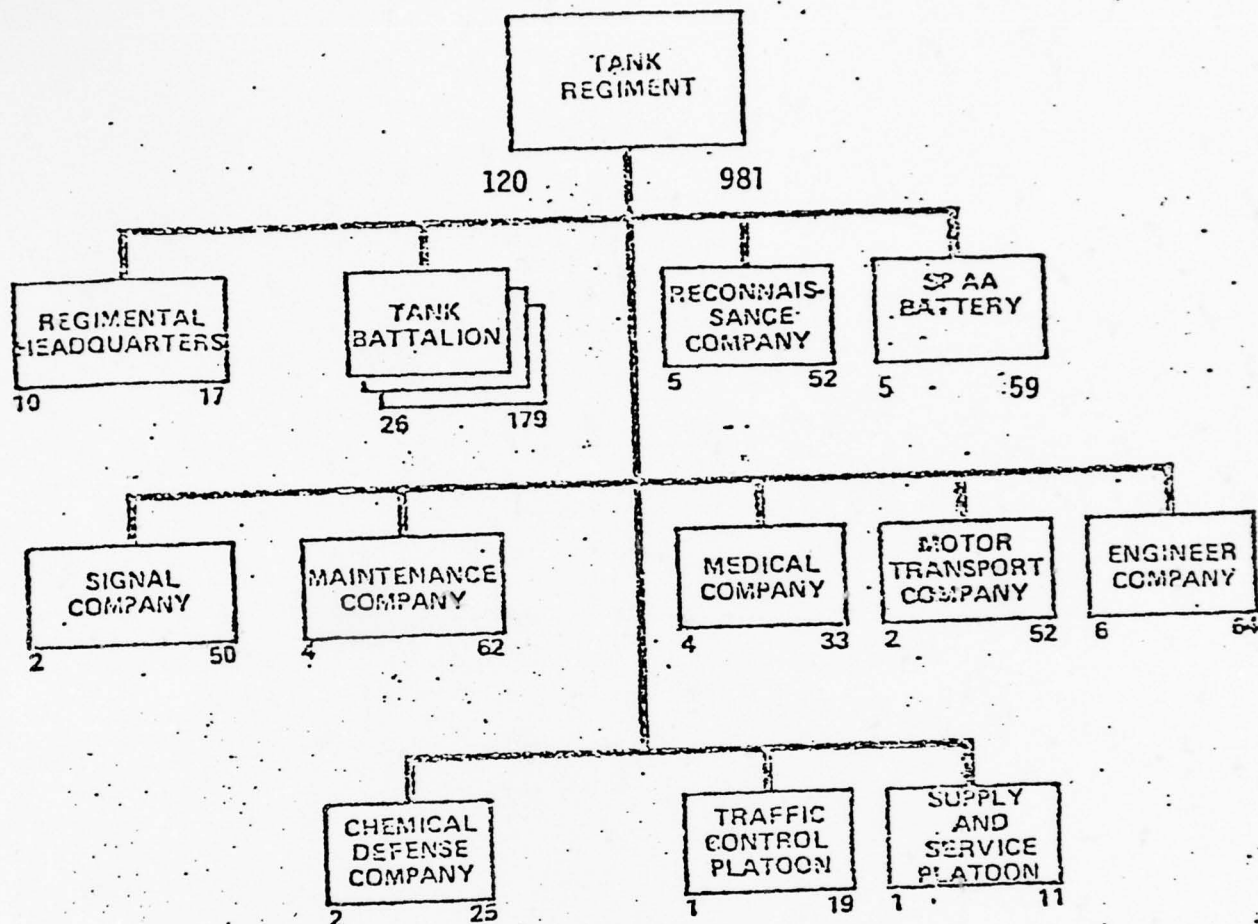
NOTE: Organization under SRC 07047H020.



*Deleted for CGSC instruction; radars are located in the gnd survl co of the CEWI bn.
NOTE: Organization under SRC 07048H030.

SOVIET

Tank Regiment, Tank and Motorized Rifle Divisions

KEY EQUIPMENT

ARMORED VEHICLES:

Medium tank, T-55/52/72
 Light tank, PT-76
 Armored infantry combat vehicle, BMP
 Armored vehicle, BRDM

95
 3
 11
 9

ANTI-AIRCRAFT:

23-mm SP antiaircraft gun, ZSU-23-4
 SA-9 (GASKIN) missile system

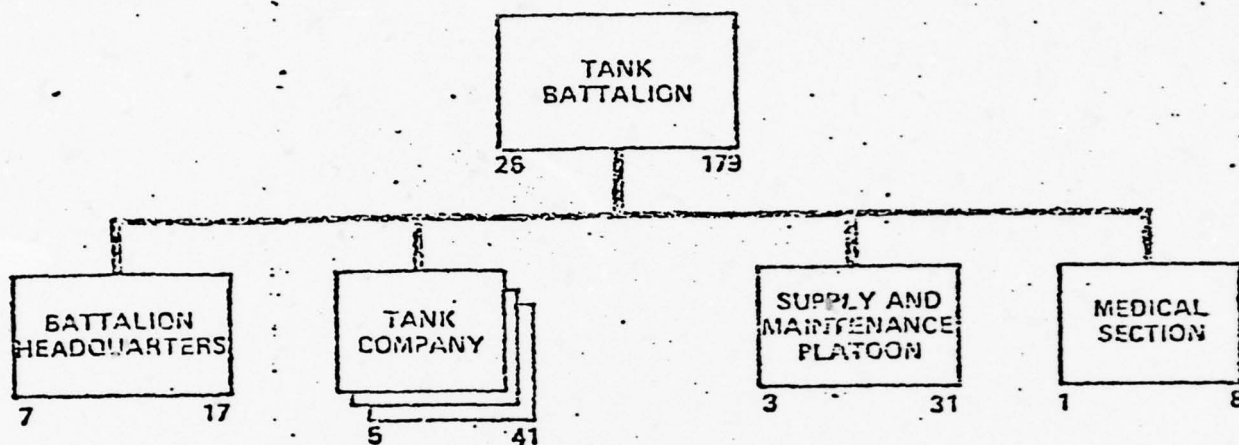
4
 4

BRIDGES

MTU
 TMM

3
 4

SOVIET
Tank Battalion, Tank Regiment



KEY EQUIPMENT

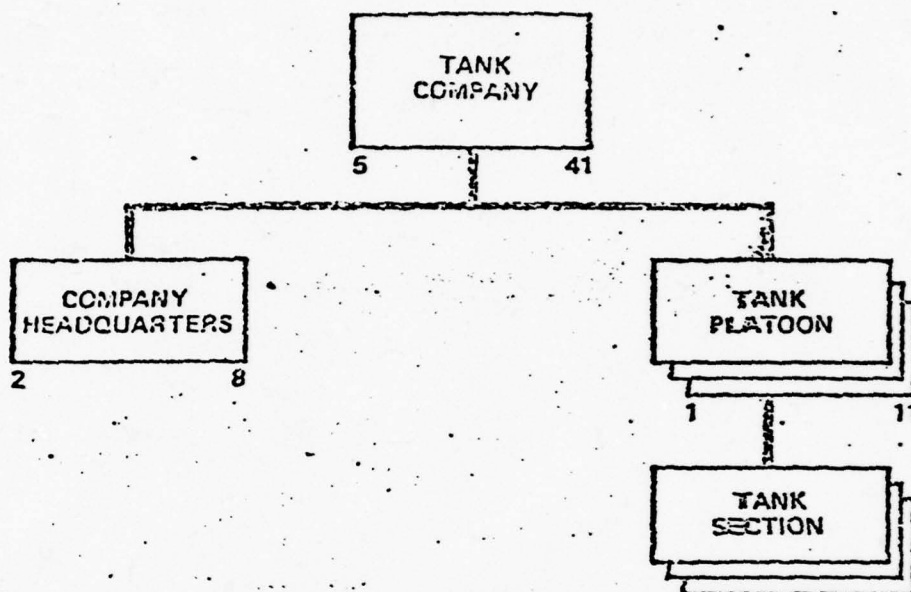
ARMORED VEHICLES:

Medium tank, T-55/62/72
Armored vehicle, BRDM

31
3

SOVIET

Tank Company, Tank Battalion, Tank Regiment

KEY EQUIPMENT

ARMORED VEHICLES:

Medium tank, T-55/62/72

10

APPENDIX B

TERMS

ACTIVE DEFENSE - Economizing forces in less threatened areas to concentrate against main enemy thrusts. "In an active defense, battalion task forces and subordinate company teams may engage the enemy from battle positions and, when appropriate, move to other battle positions, or may establish strongpoints around which the battle can pivot.

AVENUE OF APPROACH - That route which offers the least resistance and risk but still offers the greatest advantage to the user.

BREAKTHROUGH ATTACK - An attempt to consolidate forces on small frontage to breakthrough weaknesses of gaps in the enemy's line. The Soviet Army emphasizes breakthrough in order to carry the battle to the enemy rear. "The concept provides for two echelons of attack forces. The assault will not necessarily be directed to the seizure of key defensive terrain, instead, attacking units will attempt to push through weakly defended or unoccupied areas to create gaps that will permit the exploitation forces to strike deep into the enemy's rear. The capture of strongpoints and key terrain is left to succeeding echelons. Once the breakthrough is accomplished, subsequent action is the encirclement and destruction of the penetrated enemy defenses characterized by a series of meeting engagements."

BATTLE POSITION - A specific location selected as a result of terrain and weapon analysis from which a unit can defend, block, reinforce or attack by fire. They may be selected for units as large as battalions or as small as

platoons. Where possible, battle positions are selected to provide mutual support and add depth to the defense. Battle positions may be developed as strongpoints if they are vital to the overall defense.

COVERING FORCE AREA - (CFA) The area forward of the main battle area where covering forces are employed. These CFA forces normally delay the enemy, gain intelligence and attrit his forces as much as possible before reaching the forward edge of the battle area (FEBA).

DECISIVE ENGAGEMENT - That point in a battle when a unit cannot extract itself from a battle without some outside influence.

EXPLOITATION - An offensive operation following a successful attack to take advantage of weakened or collapsed enemy defenses. Its purpose is to secure deep objectives or destroy enemy forces.

KEY TERRAIN - Terrain that when occupied or controlled, offers a marked advantage over the enemy.

MAIN BATTLE AREA - The area in which the decisive battle will be fought. It is behind the covering force area and is bounded by the FEBA, lateral boundaries and a rear boundary.

MASS - The concentration of combat power. To concentrate combat strength by timely maneuver of forces and their fire support to a decisive place on the battlefield.

OVERWATCH - Protection of a moving unit until it moves to a new position. Units leapfrog forward and provide overwatch/protection for each other.

PENETRATION - A form of offensive maneuver that seeks to break through the enemy's defensive position, widen the gap created, and destroy the continuity of his positions. (Closely resembles Soviet term - breakthrough.)

REAR AREA - The area in the rear of the combat and forward areas. The area in which supply, maintenance support, communication centers and administrative echelons are located. A division's rear area extends from brigade rear boundaries (rear of MBA) to the division's rear boundary. A Corps rear area extends from division rear boundaries to the Corps rear boundary.

STRONGPOINT - A specific location, normally designated by a brigade commander, selected as a result of terrain and weapons analysis. Strongpoints are positioned and organized so that they are not easily bypassed, overrun by armor or rooted out by Infantry. They are designed to cause the enemy to mass in front of them, thereby generating a high density of targets that are susceptible to destruction. Contrasted with a battle position, a strongpoint will normally take longer to organize and prepare, and will require significantly greater amounts of materials and engineer support than a battle position. Strongpoints are not routinely established; they are the exception, not the rule.

NOTE: The preceding terms were extracted from the USACGSC RB 100-7, THE COMMON LANGUAGE OF TACTICS, July 1977.

APPENDIX C

PSYCHOLOGICAL FACTORS

DECISION "...the process by which a decision is reached is, in the final analysis, nearly always a secret, which, in most instances remains insoluble even to the person who has arrived at the decision."¹

DECISION "A head which has a hundred thoughts but which can neither hold fast or think out a single one, will always remain undecided and irresolute in tactics."²

DECISION "...is not a problem of simple arithmetic, but a creative act."³

DECISION "...in war is a clinching act. It is the action which finally delivers the victory surely into one's hands."⁴

DECISION "...implies a final determination of the issue."⁵

Why does a military leader decide to begin a career that will undoubtedly affect the lives of hundreds, thousands or even millions of people?

The preceding examples of attempts to define "decision" indicates that the meaning is varied and occasionally confused. Everything we do stems from a decision. Some of these decisions are derived from complex thought processes and others are emotional or even automatic. They are, none the less, decisions. They come from what we are and what we have been and they determine what we will even be. Most decisions can be changed but can never be erased completely, once made. Decisions will invariably be of some effect on the leaders, subordinates and associates and ultimately on the decision-maker through response feedback.

There are many reasons why an individual becomes a soldier and it is impossible to stereotype the individual that will eventually command a mechanized Infantry battalion. However, many of the stimuli that brings him to such a position can be discussed.

It has been said that there are two types of successful commanders. "The Military genius who appears occasionally and the commander who has the great gift to imbue his command with his own spirit of confidence."⁶ Although both types are affected by the same pressures, the latter is much more susceptible to pressure because confidence is so intangible. Confidence comes from success and to a great extent, vice versa. Conversely, military genius provokes original thought, success and ultimately confidence. "In case of doubt, the bolder decision is better" and "unwavering adherence to our own purpose" while avoiding "crossing the border line from firmness to inflexibility"⁷ are statements that support these two successful commanders. A less confident commander would be one to fear boldness, gain mediocrity and "follow the book" regardless of the outcome.

Command in combat is unique in that the true fruits of years of study can only be tested in combat although less than perfect simulated methods do exist. "While information overload is known to have certain psychomotor consequences, the correlation between its effect and behavior in combat is at best an untested hypothesis."⁸ "When an individual experiences unnecessary or excessive frustration, he tends to become psychologically fixed at the point of frustration."⁹ Although frustration is not conducive to good learning usually, it becomes necessary to forecast future responses of combat leaders. "A combat environment brings unusual pressures to bear on the decisionmaker. Fear of enemy action, extended periods of

physical exertion, status and condition of subordinates, possible extended periods on reduced rations, fear of capture or death are only examples of the many external influences that may have great significance on the decision-maker."¹⁰ A commander must know his business well. "To accomplish a combat mission competently, at the right time and with minimum effort, the officer must have profound military knowledge."¹¹ His decisions are a product of, "preconceived opinions, spiritual power, strength of character, maturity of mind, personal experience, self appraisal, unceasing efforts at self improvement, cool head, aggressive spirit and thorough education in strategy and tactics."¹²

Tactics and the application thereof must be written in general terms. To do more would restrict the commander too much. Initiative and imagination would be lost. "An absolute doctrine is impossible, writes MG JFC Fuller, for once doctrine becomes dogma, woe to the army which lies enthralled under its spell."¹³

A military career is heavily influenced by command influence from superiors. Some claim that, "a distinct difference exists between the terms planning guidance and command influence. The first guides the subordinates while the second restricts options but maintains the same standard." Others support the theory that, "...command influence is not always bad. Without it you don't have a commander."¹⁴ Obviously, the two statements agree that guidance is good. The latter simply fails to express the ill effect that command influence can have if improperly applied.

These career pressures listed and many more are what mold a professional officer and guide him to his destiny. Much care must be taken by, not only those that seek command, but by those who direct the future and present commanders. Otherwise, reporting to superiors will be "defensive"

and will be various shades of the truth and what the subordinate thinks the commander wants to hear rather than what the commander should hear.

The future commander is subject to many social pressures while a member of the armed forces. During a major war that encompasses civilian industry, soldiers have historically enjoyed a heroic type life and were recognized and welcome in the majority of circles. In the absence of the stimulation of war and the possibility of danger and/or loss of limb or life, peers quickly forget the need for an armed force. Job justification becomes a pressure that causes some concern. Although usually slight, it does have an effect on the soldier. This fact could be considered a plus, however, since combat completely justifies his years of labor. Whether positive or negative, it invariably affects the soldier and the decisions he must make.

If all the pressures described are real and the commander's responsibilities are so important, why does an individual select that vocation? He certainly does not face the pressures to attain wealth because, although adequate, an honest soldier will not become rich due only to military remuneration. He faces the ultimate challenge for many reasons. Some are strictly personal and may range from a love of fear, excitement and danger to a fierce, patriotic pride that drives him to defend his country.

Some leaders do what they do because of a sincere, natural feeling of responsibility. They feel that something must be done and they have the ability to direct that action. "Toward the end it is essential that the will of one give direction to the mission even though there be not more than two in the working unit."¹⁵ This quotation only indicates that in any situation, a leader is necessary and will evolve.

Being a member of the armed forces does not automatically indicate leadership. A soldier must decide what branch or specialty he desires to pursue. A decisive, adventurous type may select the combat arms and further --- Infantry. All combat action is coordinated and orchestrated by the Infantry leader. In that capacity, the Infantry commander assumes his ultimate responsibility. "Making a decision is the most responsible stage in the activity of a commander."¹⁶

Competition with one's peers is a driving factor for the future battlefield commander. Like units are equal in their Table of Organization and Equipment but unequal in production. "Command decisionmaking ability is the key to these differences."¹⁷ (Differences referred to are the results achieved through commander's ability).

Challenge of the job itself is enough to interest future commanders. "A tactical question awakens our spiritual and mental powers. It demands keenness and understanding, common sense and imagination, firmness and patience, caution and daring, sense of locality and memory, judgment and the power of decision."¹⁸ "Deep understanding of the fundamentals of modern battle, precise knowledge of the demands of manuals, of the enemy's organization, armament and tactics are required of them."¹⁹ Fortunately, war is not an ever present phenomena. Some commanders never receive the ultimate challenge of combat command. However, even the training for such an eventuality is very demanding and offers a great challenge for the competitive combat leader. "A logical procedure is to study individuals experimentally in a hostile environment characterized by noise, unpredictability, fatigue, conflicting interests, darkness and rugged terrain."²⁰ The U. S. Army Ranger School at Fort Benning, Georgia is an excellent example of a most stressful

simulation of combat for training of future combat leaders. Except for the real danger of an armed enemy, the other factors can be duplicated and even increased to determine the probability of success in combat of the Ranger aspirant.

Not all commanders are successful. The chance to fail is even greater than the chance to succeed. Command is much sought after and is very competitive. Some reasons for failure as a commander are: "not a fighter, failed to achieve favorable results, lack of recent troop experience, and lack of overall competence."²¹

Climbing the ladder of success to eventually command a battalion in combat may be successful or end in failure. It will invariably be a tough, challenging life to reach a goal that may culminate in a short period of combat to prove his ability. The commander's reward will range somewhere between eternal damnation for even a small mistake to the result of self satisfaction and recognition.

Why does an individual seek to command during combat? What must he consider other than the immediate tactical situation? He must fully understand the mission, enemy, terrain and troops available. He must know the troops he commands. Along with his own personal needs, he must care for his subordinates. The commander must be constantly concerned with the morale and welfare of his troops. "History contains instances of troops who broke and ran more because they had turned out on a cold morning without breakfast than on account of the enemy's fire."²²

A commander can hardly afford to show an uncertain attitude or feeling. He must remain firm but not inflexible, understanding but not coddling. He must remain alert to situations and be prepared to respond

quickly. "...even when an unequivocal and concise order has been received, situations which call for independent decisions will repeatedly arise during combat."²³ Combat is ever changing and demands reaction and action versus conduct of a stereotyped plan. "The situation began to obscure during the course of combat, during our own or enemy penetrations and during counterattacks or breakthroughs. Entirely new situations arose in these instances."²⁴

Many times there are several good alternatives to a plan. "What if one decision is more certain but a less certain variable could lead to success plus much greater possibility of further success than the initial decision?"²⁵ Like a master chess player, the commander must bear the burden of making that decision. The challenge of making decisions sharpens his mind for future decisions. "Mild stress may generally result in improved performance, increased activity, alertness, more learning and higher level of creativity. To the contrary, extreme stress results in deterioration of mental functioning and emotional control."²⁶

The combat commander is responsible for planning future operations. "...What are the marks of sound tactical procedure? The answer is simplicity and a firm adherence to a line of action adopted."²⁷ Simplicity is a principle that should never be violated. "A complicated plan has a poor chance even in peacetime maneuvers. In war it had none."²⁸ An alternate plan should always be prepared in case surprise and deception is lost in the primary plan.

The commander must insure that his troops are not only physically and technically ready to fight but also psychologically ready to fight. "Simply to release man from the fear of death does not insure that he will act as if he were immortal."²⁹ "Surely, this is the heart of the matter -- the

relating of the weapon to the ground and of the soldier to the weapon and the ground, and the relating of all weapons within the formation to each other and to the ground, so that there will be maximum firepower and maximum defensive strength within the position. My answer to this fundamental proposition in traditional military logic is that it is absolutely false. The heart of the matter is to relate the man to his fellow soldier as he will find him on the field of combat, to condition him to human nature as he will learn to depend on it when the ground offers no comfort and weapons fail."³⁰ S.L.A. Marshall's WW II research on the American soldier indicates that only 25% of the soldiers fired their weapons in combat even when faced with a formidable enemy, an impossible situation and almost certain death. Only through direct, forceful leadership from men facing the same dangers will the troops of this psychological make-up be led to complete their combat tasks. Many different personalities evolve in combat that would otherwise have remained covert. Men who had claimed bravery before will hide in fear and seemingly weak, diminutive men will become extremely aggressive.

Leaders are no different. Emotion has much to do with command in combat. The "dead pan of a poker player"³¹ may be very fitting at a high level staff but may relay insufficient emotion at the platoon, company and battalion level. Close, constant, direct and emotional leadership is necessary to instruct soldiers of their deadly mission.

There are many contradictions in the decisionmaking process. Leaders must normally make decisions in the "grey" area rather than one that is clearly black or white. Examples of the type contradiction a combat commander might encounter follow.

1. Concept of the enemy and the goals of friendly forces.
2. The different elements of the situation.
3. Incomplete data on the situation and the necessity to foresee its further development.
4. The increased volume of information available to the commander and the reduced time in which to react.
5. The necessity for a well grounded decision and commanders ability to solve the task successfully.³²

Combined with these and many other contradictions, the commander is constantly challenged by "decisions of encounter."³³ He is placed in a situation that gives him no time for an estimate of the situation or staff briefings. He must then modify, shortcut, estimate, and answer as quickly as possible. Self-discipline, training, attention to detail during longer planning sessions and calmness will allow the mind of the commander to assimilate information quickly and make correct decisions.

"A contrasting opinion in Charles E. Lindblom's article, THE SCIENCE OF MUDDLING THROUGH contends that no rational decision process exists."³⁴ Although all are allowed an opinion and "muddling through" does exist; clear, methodical planning is far superior to it.

In summary, the psychological pressures on the combat commander is severe to say the least. There are as many examples as there have been commanders. These few shown were only to stimulate the reader to remember from self experience the multitude of pressures that may be encountered.

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APPENDIX D

EXAMPLE BATTLE SCENARIO

The following sequence is an attempt, in simple terms, to describe the actions of a battalion commander conducting defensive combat. There is never enough time in combat to complete defenses. However, since Europe is the chosen battlefield for example and the U. S. has occupied the ground for many years, safe assumptions would be that the positions are well prepared. Battle positions have been prepared to the extent that they near being called strongpoints. Obstacles/minefields have been prepared or planned for immediate implementation. Artillery targets have been selected based on likely avenues of approach into the defensive sector. LP/OPs have been placed into position for early warning. Reconnaissance patrols have been active. National intelligence is available to the tactical commander. Ground surveillance radar are emplaced for maximum range along the same selected routes as before. Visibility is unrestricted. Excellent fields of fire/observation are available. Support is available. Communications are excellent and unaffected by electronic warfare.

SEQUENCE OF BREAKTHROUGH ATTACK

The Soviet attack will have many indicators. They attack in three phases.

1. Reconnaissance.

- a. 4-5 man patrols on motorcycles or scout cars 36 hours in advance of the main attack.

b. Reconnaissance overflights about 12 hours ahead of main attack.
(single or paired aircraft).

c. 2-4 vehicle (motorcycle/BRDM/PT76) 2-6 hours prior to main attack. Chemical battalion and engineer battalion may have reconnaissance personnel with this element. Two T-62 tanks will follow reconnaissance approximately 200-400 meters.

2. Probing Attack (1-4 hours prior to main attack).

a. Two T-62 tanks and 6 BMP.

b. Artillery - two 122mm and two 152mm will engage two targets (60 rounds for effect).

c. One battery of BM21 (Multiple Rocket Launchers) will engage one target with 240 rockets.

3. Main Attack.

a. Two battalions in first echelon of 90 vehicles or more.

b. Artillery will select five targets on which they will fire five adjusting rounds in preparation for main attack breakthrough.

c. BMPs and tanks mass at 500-1200 meters.

d. Artillery fires 30 minute preparation of 300 rounds (122/130/152mm) and 1400 rockets.

e. Regiment attacks on small frontage to attempt breakthrough.

CONDUCT OF THE DEFENSE

Through interviews of instructors at the tactics department of the Command and General Staff College (CGSC), Fort Leavenworth, Kansas, the following sequence, in most but certainly not all situations, will be

followed by U. S. forces. The sequence is not absolute, the doctrine is not dogmatic. Only the commander on the ground at the time of attack could determine what should happen and in what sequence. Much depends on terrain, weather, visibility and numerous other variables.

SEQUENCE

1. Tactical Air - Interdiction on 2nd echelon; CAS on 1st echelon; Counterair on Frontal Aviation. (Simultaneous and as much as is available).
2. Attack Helicopter - (more than 3000 meters standoff).
3. Artillery (continuous from time enemy comes within range). Copperhead should be used as soon as some friendly unit can observe to place laser beam on targets.
4. FASCAM - As soon as enemy avenues of approach are known. ((Continuous; use throughout battle to delay, deceive and attrit the enemy)).
5. Tank M60A2/Sheridan/TOW - Engage at maximum range (approximately 3000 meters) with guided missiles. Continue to fire until enemy reaches approximately 2000 meters.
6. Mines/Obstacles - Obstacles and mines support weapons systems, therefore the following ranges are exclusively dependent upon the weapons they support. For general planning, the commander should place mines/obstacles about 200 meters short of maximum effective range of direct fire weapons.
7. Tanks remain at original positions until the enemy is within 2000 meters.
8. M60A1 Tanks engage enemy until approximately 1300-1400 meters. Tanks should use supplemental/alternate positions to deceive the enemy as location and strength. Battle drills can be practiced but only tank commander can determine how many times he can fire without moving. Tanks attacking one

at a time through narrow terrain might allow the tank commander to remain in position while tanks attacking in mass might demand that the tank maneuver after each time it fires. Ideally, each tank could fire two to three times before maneuvering.

9. Prior to disengaging M60A1 tanks, M60A2s, Sheridans and TOWs must be in new positions and fire overwatching fire for the forward tanks.

10. The battalion/task force commander must control the maneuver company/teams to establish mutually supporting battle positions.

11. Continuous leapfrogging of units/weapons to continuously attrit, delay and deceive the enemy with a minimum loss of space is the mission.

12. This procedure is repeated until the task force either wins or is forced to stand at one point and finish the fight. Tank commanders, section leaders, platoon leaders and company/team commanders become increasingly important as the battle gets nearer and as the decision to stand and fight becomes necessary. Due to the complexity of technology, fighting outnumbered and electronic warfare, many decisions must now be made by these junior subordinates. They may be separated from their superiors both physically and by radio. The decision making process is one that must be determined by individuals and small units. Initiative, determination and intestinal fortitude are imperative in this situation.

13. At that time Dragons and LAWs should become the close-in fighting weapons to defeat armor. Note: Dragons would have been used previously at 1000 meters by stay behind forces if the commander chose to use that option.

14. Continuous use of USAF, Artillery, Copperhead, DPICM and FASCAM throughout will give the weapons systems time to hit one or two vehicles

from each of their successive positions before maneuvering to a new position.

The method described above will allow the U. S. force to trade space for maximum damage on the Soviet force. Successful accomplishment of this sequence will make the price required to be paid by the Soviet force too great for him to continue to attack. One must remember that any change in the variables described for this sequence will require the battalion commander to adjust the sequence to compensate.

APPENDIX E

DECISIONS

What decisions must be made? Army Training and Evaluation (ARTEP) for Mechanized Infantry/Tank Task Force 71-2 dated 17 June 1977 was used to determine the tasks and sub-tasks that a battalion commander encounters during combat or preparation for combat. Personal experience, personnel interviews, historical examples and observation of battle simulation games offer additional tasks, sub-tasks and decisions necessary for their accomplishment.

The battlefield commander must not only make the correct decision, he must communicate his decision and concept to his subordinates. "Person to person communications is necessary."¹ Although movement on the battlefield causes additional danger to the commander, the decision to communicate directly to subordinates and to be seen by their subordinates in dangerous areas is one that eliminates unnecessary confusion and raises morale of the soldier. Each decision may start as a cold, hard, calculated risk but emotion, tact and human understanding invariably alter it.

The commander must be concerned about communications, location of the CP, security, weather, terrain, maneuver units, ranges of weapons, enemy capability³ and many others as will be listed in this chapter.

The commander must insure that his subordinates are kept informed. He must be sure that orders are heard and understood. "If there is not time for this precaution, there is not time for the maneuver."⁴

The pages that follow will use as a starting point the tasks and subtasks found in Chapter 8-6 DEFENSE and Chapter 10 CONTROL AND COORDINATION OF OPERATIONS of ARTEP 71-2. The breakdown of the sub-tasks will be kept within reason for the purpose of brevity. Most of the sub-tasks could be broken down into 5-10 smaller but still significant decisions. This chapter should only reinforce the idea that command and control is extremely complex and that commanders need some method(s) for assisting them in the decisionmaking process.

Each task will be numbered in accordance with its location in either Chapters 8-6 or 10 of ARTEP 72-1. (i.e. 8-6-A PREPARE PLAN and 10-1-A ANALYZE MISSION). The tasks in both chapters, because they occur simultaneously on the battlefield during the defense, will appear intermingled chronologically in the list. It is impossible to keep the list totally chronological and in sequence. Many tasks are being conducted simultaneously. The commander, however, is still responsible for all that the unit does or fails to do. This fact adds pressure to the commander through possible confusion.

TASKS AND SUB-TASKS

Task 8-6-A PREPARE PLAN and Task 10-1 through 10-1-L DEVELOP PLAN BASED ON MISSION.

- Conduct Mission Analysis

- Determine specified and implied tasks

- Determine friendly and enemy situation

- Define defense doctrine/tactics

Define mission to retain

Define Battle area

Understand higher concept and develop own

Acknowledge/Comply or request change to order

Issue warning order

Use/maintain secure communications

Issue OPORD/FRAGO

Use and supervise troop leading procedures

Supervise preparation of equipment

Disseminate order by secure means

Plan time sequence: Allow time for subordinate planning

Determine tactics

Determine deployment of forces

Determine task organization

Plan control measures

Select key terrain

Determine EEI

Conduct terrain analysis

Consider effects of current weather

Consider opposing courses of action

Determine location for major weapons and equipment

What is the situation in other units' sector

Determine loss estimates

Establish replacement procedures

Establish reporting scheme

Consider/Plan for disposition of prisoners of war

Maintenance of morale
Decorations and awards
Graves Registration
Health services
Maintenance of discipline, law and order
Headquarters management
Message center operation
Conduct ground reconnaissance
Conduct air reconnaissance (Army)
Conduct air reconnaissance (USAF)
Plan for target acquisition
Plan for surveillance of battlefield
Collect technical intelligence
Procure/distribute maps
Plan counterintelligence
Prepare alternate operation plan
Establish priorities for supplies, firepower, personnel, etc.
Plan fire support IAW concept of operation
Plan for troops movements
Establish communications system
Determine maintenance and evacuation procedures
Plan movement and locations of Combat Support and CSS units
Plan disposition of excess or captured materiel
Establish coordination/communications with other units
Determine friendly capabilities/vulnerabilities
Determine enemy capabilities/vulnerabilities

- Select routes/zones to battle positions
- Define and select battle positions
- Plan to block most critical avenues of approach
- Plan for mutual support with overwatching fires
- Select delay and covering force positions

TASK 10-4 to 10-4-C TROOPLEADING PROCEDURES

- Supervise preparation to conduct mission
- Insure morale is maintained in good manner
- Insure troops are protected from weather
- Continue decisions started in Task 8-6-A and 10-1 to 10-1-L
- Insure tactical troop movements are to benefit of soldiers
- Insure completion of the mission
- Conduct rehearsals

TASK 10-9 to 10-9-D MANAGE COMBAT SERVICE SUPPORT (CSS)

- Arm the systems
- Determine available supply rate (ASR)
- Determine controlled supply rate (CSR) if applicable
- Deliver supplies as far forward as possible
- Select routes for CSS support
- Consider highway/military regulations
- Plan for traffic control
- Establish priorities for recovery, evacuation, etc.
- Plan for transportation beyond organic capability
- Fix the systems
- Determine criteria for repair or evacuation
- Coordinate next higher maintenance support

Repair as far forward as possible

Establish cannabilization policy

TASK 10-3-J PROVIDE SUPPLIES

Coordinate with supporting supply element

Establish unit priorities

Determine availability of critical supplies

Establish and test supply dissemination procedures

TASK 10-3-K MAINTAIN EQUIPMENT

Determine status of equipment

Establish maintenance policies

Supervise maintenance policies

Coordinate maintenance assistance

Monitor equipment status continuously

TASK 10-1-A to 10-2-D ANALYZE MISSION

Determine who, what, where, when and why

Repeat Task 8-6-A and Task 10-1 to 10-1-L

TASK 10-5 to 10-5-D SEE THE BATTLEFIELD

Determine significant tactical indicators and targets

Determine significant OPFOR movement

Determine significant reinforcement, artillery locations

Determine significant air defense positions, assembly areas
and tank positions

Gather data from all available sources--all assigned, attached
or DS units (ESM, UGS, GSR, reconnaissance units and troops)

Request intelligence from higher headquarters

Determine intentions of enemy

Determine whether the enemy will continue to attack, defend
or withdraw

What are the movements of his units

Where is his armor

Determine relocation of artillery and air defense

Insure timely dissemination of information

Determine place/time to concentrate forces

React to changes in original plan

Determine EEI

Plan counterintelligence

Conduct battlefield surveillance with all assets

TASK 8-6-B ORGANIZE GROUND (mentally)

Designate battle positions

Determine enemy avenues of approach

Assign specific missions for units at each battle position

Plan for successive and supplemental battle positions

Determine size of sector for company teams

Plan battle from start to end to insure defense in depth

Plan defense well forward (along FEBA if possible)

Take advantage of all natural terrain obstacles

Plan for secure communications

TASK 10-3 to 10-3-I PREPARE AND ORGANIZE THE BATTLEFIELD

Maximize chance for success

Maximize survivability

Determine critical place and time (estimate)

Prepare to alter decision during battle

Select a course of action

Organize for combat

Task organize

Develop scheme of maneuver to concentrate maximum combat
power at the critical time and place

Select control measures that support the scheme of maneuver,
facilitate fire support and movement and permits rapid changes
as the battle develops.

Update fire plan

Plan alternate means of communications

Insure operation of MIJI plan

Communicate/coordinate plans and orders

Insure security

Insure timeliness

Insure that orders are clear, concise and are essential

Use engineers to reinforce terrain

Plan/employ active/passive security measures

TASK 8-6-C OCCUPY BATTLE POSITIONS

Prepare battle positions

Plan, prepare and man OP/LP

Maintain radio listening silence

Establish deception plan

Inspect battle positions

Insure good observation, fields of fire, cover, concealment

Establish battle positions as stated in plan

Change battle position if necessary

- Coordinate changes with all units involved
- Insure that battle positions are dispersed
- Insure that battle positions are mutually supporting
- Plan final protective fires
- Plan for illumination
- Designate target reference points and checkpoints
- Reconnoiter subsequent battle positions
- Mark routes to new positions
- Prepare new positions
- Improve present positions

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 10-9 to 10-9-D MANAGE CSS

Repeat; continuous

TASK 10-3-J PROVIDE SUPPLIES

Repeat; Continuous

TASK 10-3-K MAINTAIN EQUIPMENT

Repeat; continuous

TASK 10-3-J PROVIDE SUPPLIES

Request obstacle material

Deliver obstacle material

Coordinate engineer assistance

TASK 8-6-D CONSTRUCT AND IMPROVE OBSTACLES

Emplace obstacles; including hasty minefields

Extend natural obstacles

Insure that obstacles enhance the tactical plan

Plan obstacles so they are tied in with fires

Manage minefield so mines can be retrieved

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 10-5 to 10-5-D SEE THE BATTLEFIELD

Repeat; continuous

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 10-9 to 10-9-D MANAGE CSS

Repeat; continuous

TASK 10-3-J PROVIDE SUPPLIES

Repeat; continuous

TASK 10-3-K MAINTAIN EQUIPMENT

Repeat; continuous

TASK 8-6-E DEFEND

Detect and identify the opposing force

Control supporting fires (USAF, Naval, Artillery)

Supervise engagement by direct fire

Destroy enemy force

Suppress enemy's overwatching fire

Isolate enemy forces

Engage from all battle positions simultaneously

Reposition units as necessary

Control use of illumination at night

Insure use of night vision sights, flares, searchlights

Concentrate combat power by moving units

Shift fire from one sector to another
Control reinforcements from higher
Insure maximum utilization of ATGM'S
Coordinate continuously (up, down, lateral)
React to changes
Order economy of force operations
Insure completion of mission
Repeat tasks 10-5 to 10-5-D SEE THE BATTLEFIELD

TASK 10-6 to 10-8-D CONTROL AND COORDINATE COMBAT OPERATIONS

Determine whether to modify plan or continue
Determine new course(s) or action if:
The enemy reinforces, withdraws, attacks an exposed flank
or conducts an air assault to the rear of your position.
Obtain approval from higher
Coordinate/communicate changes
Supervise execution
Monitor the developing battle
Move about battlefield for personal contact
Maintain the battlefield
Repair damaged roads, bridges, airfields
Repair protective shelters and camouflage systems
Repair damaged POL, water and ammunition facilities
Re-seed minefields
Clear or breach opposing force obstacles
Remove friendly obstacles that hinder changed plans
Continue to control all supporting fires

Modify fire support plan

Employ organic/non-organic weapons

Employ other combat support assets

Employ electronic warfare units

Protect thinly held areas

Request additional assets (Tac Air/Attack Hel)

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 8-6-F CONCENTRATE COMBAT POWER

Company teams or platoons moved to critical place

Company teams ordered to shift fire

Integrate reinforcements

Control Combat support

Plan troop movements

Issue FRAGO by secure communication

Plan deception

Allow for time/distance of moving units

TASK 10-6 to 10-8-D CONTROL AND COORDINATION OF COMBAT OPERATIONS

Repeat; continuous

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 10-9 to 10-9-D MANAGE CSS

Repeat; continuous

TASK 10-3-J PROVIDE SUPPLIES

Repeat; continuous

TASK 10-3-K MAINTAIN EQUIPMENT

Repeat; continuous

TASK 10-10 to 10-12-D SECURE AND PROTECT THE TASK FORCE

Suppress opposing forces intelligence effort

Defeat or suppress OPFOR electromagnetic intelligence effort

Supervise commel security measures

Defeat or suppress OPFOR imagery intelligence effort

Conduct liaison with territorial security forces

Deceive the opposing force (dummy equipment, communications)

Reduce vulnerability with dispersion

Detect/Impede threats to task force security

Detect/defeat OPFOR air assets

Establish air defense priorities

Organize air defense assets

Reposition air defense assets

Assess damage to OPFOR and report to superiors

Continue troop leading during battle

Supervise compliance with task force order

Move about the battlefield for personal contact

React to changing situations

Enemy electronic warfare (jamming, deception)

Chemical or biological attack

Nuclear attack

Loss of key member of command group

Adjust command group duties

Report to higher headquarters

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 8-6-G DISPLACE TO SUBSEQUENT POSITIONS

Maintain direct, indirect and other supporting fires

Plan movement; consider time/distance

Issue FRAGO by secure means

Plan deception

Develop continuous estimate of the situation

Move units by concealed route

Hold specified terrain as ordered

TASK 10-6 to 10-8-D CONTROL AND COORDINATION OF COMBAT OPERATIONS

Repeat; continuous

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 10-9 to 10-9D MANAGE CSS

Repeat; continuous

TASK 10-3-J PROVIDE SUPPLIES

Repeat; continuous

TASK 10-3-K MAINTAIN EQUIPMENT

Repeat; continuous

TASK 8-6-H CONDUCT COUNTERATTACK

Make estimate of the situation

Issue FRAGO by secure communication

Consolidate combat power

Control all combat support assets

Plan deception

TASK 10-6 to 10-8-D CONTROL AND COORDINATION OF COMBAT OPERATIONS

Repeat; continuous

TASK 10-4 to 10-4-C TROOP LEADING PROCEDURE

Repeat; continuous

TASK 8-6-I CONSOLIDATE

Position force in new battle positions

Prepare new battle positions

Establish security elements

TASK 20-4 to 10-4-C TROOP LEADING PROCEDURES

Repeat; continuous

TASK 10-9 to 10-9-D MANAGE CSS

Repeat; continuous

TASK 10-3-J PROVIDE SUPPLIES

Repeat; continuous

TASK 10-3-K MAINTAIN EQUIPMENT

Repeat; continuous

TASK 8-6-J CONDUCT SUSTAINING OPERATIONS

Return to Task 8-6-A and 10-1 PREPARE/DEVELOP PLAN

REPEAT; CONTINUOUS ***** REPEAT; CONTINUOUS

These decisions do not address the emotional stresses on the commander. They only indicate the complexity of the coordination of the air/land battle.

Each decision could have been sub-divided further. A further listing of tasks, however, is unnecessary as our concern is not with the decision but the process by which the decision is made.

Decisions in battle are like snowflakes; no two are ever the same. Outside influences affect each one just enough to make it a unique challenge for the commander.

ENDNOTES

1. S.L.A. Marshall, MEN AGAINST FIRE, William Morrow and Company, New York, 1947, p. 137.
2. Lyman Harrold, C AND C - DEMANDS OF THE BATTLEFIELD, Armor, Mar/Apr 1975, Vol. 84, p. 31.
3. S. L. A. Marshall, op. cit., p. 139.

SECTION 1

BATTALION TASK FORCE PLANS AND OPERATIONS

(Outline of Documents You Should Include Here)

1. Mission Statement

Statement of mission

Map (1:50,000) showing sector boundaries, adjacent sectors, force deployment in standard military symbols, and major axes of threat advance.

2. Task Organization

Identify units and add detail to include numbers of weapons by unit and other major equipment items.

3. Threat

Identify threat by type unit and principal axes of advance into sector. Add detail to include numbers of principal fighting vehicles and support from artillery, air defense, and tactical air.

4. Concept of the Battle*

A description of expected combat action in the battalion task force sector. This includes: a description of Red maneuver plans and objectives, Blue plans for maneuver of forces, expected engagements, and anticipated exchange of losses, and discussion of use of supporting artillery, attack helicopters, and tactical air.

5. Coordination Plans

Details for occupation and withdrawal of positions, recognition cues for passage through friendly units, and contact points in assigned zones in MBA.

Description of plans to withdraw forces, routes, and reorganization of units and occupation of assigned position in MBA.

6. Command and Communications Plan

Describe plan, show location of command posts, list essential equipment, and show diagram for communications network (including procedures for outages).

7. Supporting Maps and Map Overlays

This section should include a number of maps and overlays which provide details of the terrain, the Red attack, and Blue plans. Among the maps and overlays which should be included in this section are the following:

A. Maps

Special relief maps and other maps reflecting the character of the terrain in formats different from the standard 1:50,000 map.

*This description may be modified as insights are developed after conducting the battle analysis described in Section 2.

B. Map Overlays

- Details of defensive positions and of detailed attack routes.
- Details of Blue unit maneuver routes in moving from initial positions to alternative positions, and withdrawal routes to MJA.
- Attack helicopter FAARP, approach routes, and firing positions in support of ground units.
- Red artillery locations and artillery fans.
- Blue artillery locations and fans.
- Barrier plan.

8. Artillery Fire Support Plan

Show details of artillery plan by target number, location, type/caliber of weapon, number and type of rounds fired. Show fire support communications net.

9. Attack Helicopter Fire Support Plan

Show details of attack helicopter operations by FAARP location, nap-of-earth routes, forward holding positions, and pop up firing positions. Include details of timing of arrival, duration of support, and number of sorties.

10. Barrier Plan

Description of barrier plan by barrier number, location, and description.

11. Service Support

Location of trains and vehicle collecting points and logistical networks.

12. Other Plans

SECTION 2

BATTLE BOOK CALCULUS

OVERVIEW OF THE BATTLE BOOK CALCULUS METHOD

This method requires the use of a map, templates for weapon coverage, threat attack formation templates, and graph paper.

The sequence of activities used in applying the Battle Book Calculus Method is shown in this figure. The first step is to select a map at the desired scale.* The defensive (Blue) positions are then laid out on the map. Coverage templates for the particular defense weapon are cut to reflect limitation of intervisibility. An enemy (Red) force and formation is selected. Attack routes are then selected and time tagged for one-minute intervals for the selected speed of advance.

At each one minute interval the Blue weapon coverage templates are layed down and the number of Red weapons in coverage is recorded by Red unit. Similarly the number of Blue weapons engaging is recorded. Casualties for both sides are determined and plotted. The enemy force is moved again and the sequence of calculation is repeated until the battle is over.

The results of the battle are then summarized, plotted, and analyzed. New situations can be set up and the Battle Book Calculus Method applied again.

NOTE: The Battle Book Calculus Method was developed originally to analyze combat operations in the Covering Force Area of the V Corps. Accordingly, the method is presented here in terms of defensive operations. The method can be applied to offensive operations by reversing Blue and Red roles. Adjustments in templates which are required are not detailed in this presentation, but can be easily made when you are familiar with the method.

*Scale selection is discussed in the immediately following section.

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ARMY COMMAND AND GENERAL STAFF COLL FORT LEAVENWORTH KANS F/G 5/10
A LOGICAL APPROACH TO DECISIONMAKING FOR THE BATTALION COMMANDE--ETC(U)
JUN 78 F E DUNCAN

UNCLASSIFIED

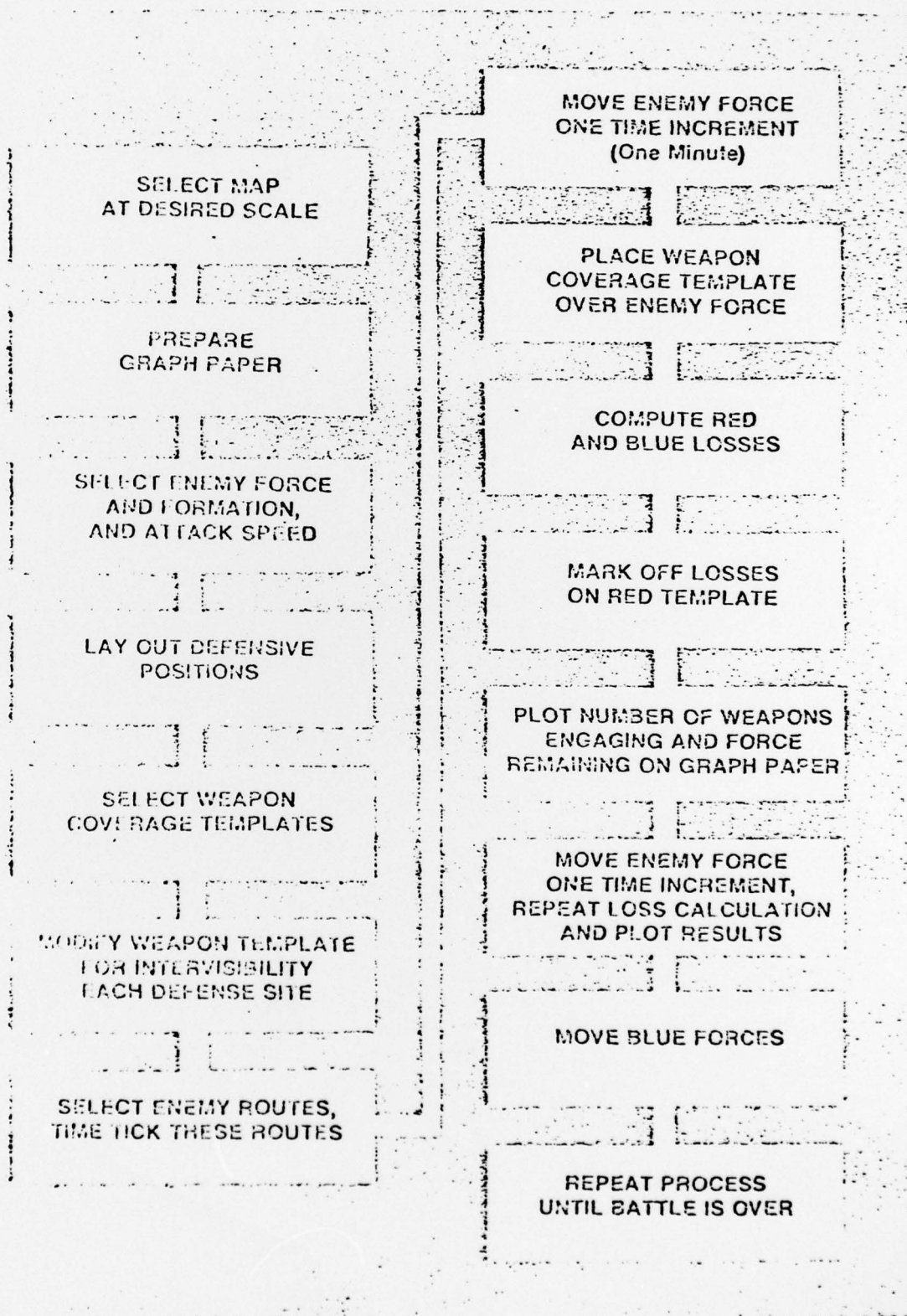
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Overview of Battle Book Calculus Method

APPENDIX G - QUESTIONNAIRE

SUBJECT: Decisionmaking aids for The Commander.

TO: Students/Instructors (CGSC)

The decisionmaking process is very difficult and challenging. The process has two distinct sides. One side is totally logical and factual. The other is emotional/psychological.

This questionnaire addresses the logical/factual side. The purpose of the questionnaire is to determine the usefulness of decisionmaking methods/aids.

A leader who is confused on the facts, allows undue concern because of peer pressure and fear of failing. What can be devised to eliminate all or most confusion?

The questionnaire is purposely kept short and direct. Please add any comments to the sheet that you think should be addressed.

Thank you in advance for your time and comments.

BACKGROUND:

Age 34.9 Branch Varied Yrs. In Service 14.8 Rank MAJ/LTC

Please list three favorite duty assignments which you have had in the military.

- 1.
- 2.
- 3.

QUESTIONS:

1. Does the decisionmaker need aids/methods to assist him/her to formulate logical conclusions?

Yes 41 No 9 (If no, please explain).

2. Are the decisionmaking methods now available well organized, consolidated and efficient?

Yes 12 No 38

3. Are decisionmaking methods now available adequate for the needs of the decisionmaker?

Yes 24 No 26

4. Should a reference book be devised which would consolidate, organize and maximize efficiency of those methods already available?

Yes 43 No 7

5. Should decisionmaking aids address only the logical/factual side of the decisionmaking process?

Yes 18 No 32

6. Are decisionmaking aids redundant and therefore bulky to keep available until needed?

Yes 30 No 20

7. Will the production of a reference book on decisionmaking methods indicate to leaders which processes should be memorized and which may use memory aids such as formats and lists?

Yes 22 No 28

8. Does the use of aids/methods prevent the commander from applying emotion or "gut feeling" to his/her decision?

Yes 5 No 45

9. Do decisionmaking aids relieve the commander of much emotional pressure by giving him/her a logical, factual basis for the decision?

Yes 23 No 27

10. Would you personally use a book that was efficiently indexed to refer the reader to a decisionmaking aid that would assist him/her to a logical/factual conclusion?

Yes 45 No 5

PLEASE RETURN TO MAJOR DUNCAN, SECTION 12.

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